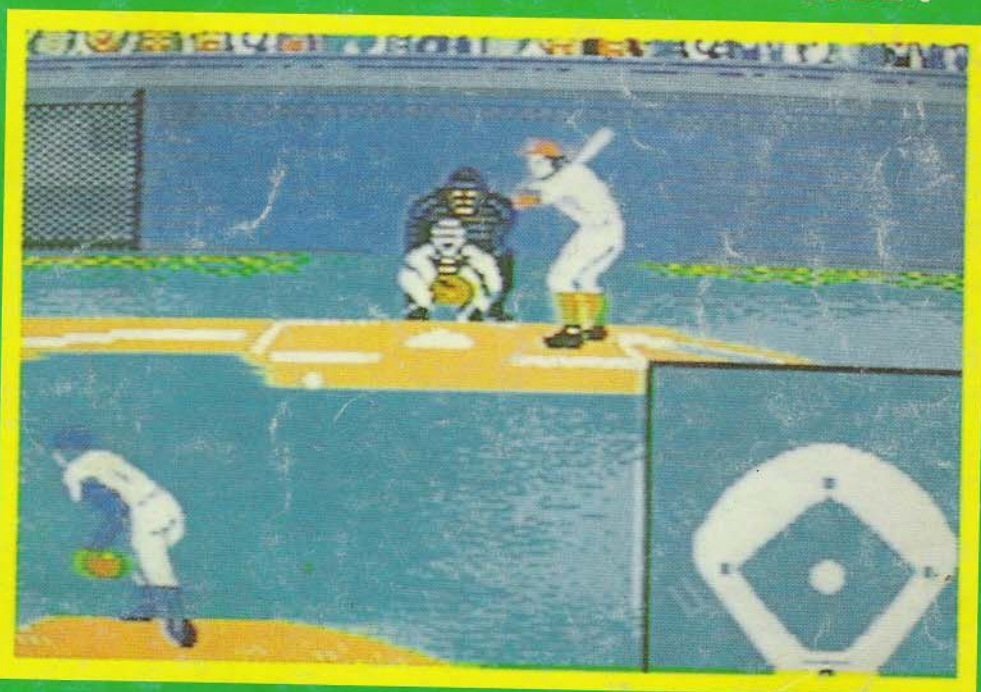# The Australian
COMMODORE
REVIEW

Review of **HardBall!**

Cockroach Turbo Rom

Cardco G-Whiz interface

Music Workshop

WordStar for the 128
Vic 20 Connecting a Second Joystick
Adventurers' Corner
Telecommunications
BBS update

The Australian
COMMODORE REVIEW
Vol 3 No 2 February 1986

Contents

Editorial

I have always been fascinated by graphics, an area where the Commodore 64 out performs many other home computers. Of late we have concentrated heavily on the communications theme, something which we intend to continue with for a while yet. However, a change of pace is due. To liven up things a little I thought it might be interesting to take a fresh look at the world of graphics with special attention to creative drawing. At this point I have collected quite a number of pictures from various would be artists around Australia.

A few are outstanding, and prompted me to make a greater effort to find others of similar quality. So from these pages the word goes forth to find artists in need of an exhibition, a little raw exposure. Over coming months we will be publishing those pictures that are of particular noteworthiness.

We would also love to see any graphics utilities you have devised that may be of value to readers.

In the meantime, break out your Koala Pads, Sketch Pads, Blazing Paddles or Light Pens and get doodling. For those who have never tampered with graphics we hope to take a close examination of what is still available, as well as a sneak preview of the fantastic gear lined up for use on the graphics computer of the year - yes, the Amiga.

A little piece of late news for adventure players, word has just arrived that *Ultima IV*, the sequel to the very popular *Ultima III*, is very near delivery here in Oz. The Apple version is already here, and judging by the documentation that is included with that, it looks as if the fourth installment of this MEGA game is set to be a big winner.

Keep those tips and questions rolling in on adventures. We will try to publish as many as possible, however at times we do become a little inundated. Well, enough of me and on with the magazine . . .

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RAM RUMBLINGS

New Commodore Manager

Commodore International has appointed Mr Tony Serra Managing Director and General Manager of Australia and the Asia Pacific Region.

Mr Serra, who was previously Commodore's National Sales and Marketing Manager, has extensive experience in retailing, including 10 years in the Norman Ross group and three years as National Retail Manager of Ansett Airlines.

The company's former Australian Chief Executive, Mr Nigel Shepherd, has taken up a major corporate posting within Commodore, as President - North America.

Mr Shepherd, who began the Commodore operation in Australia five years ago, building it to a $60 million company, is now responsible for Commodore's marketing, sales, service and production in the United States and Canada.

Commodore already holds more than 60% of the home computer market and Mr Serra says that with its increasing range, it will continue to be a dominant force in the Australian home and business computer markets.

"Unit sales for the Christmas sell-in period the - first and second quarters of the year - were about 25 percent above the corresponding period in 1984.

"An independent survey showed that the Commodore 64 Family Pack, retailing at an average price of $469, was the fifth largest selling Christmas present, ranking just behind items costing $45 or less."

Mr Serra says Commodore's dealer base has been the largest influence in its success.

"Without doubt they are the most professional group in our markets", he says.

"Commodore will be placing special emphasis to improve dealer support during 1986."

Mr Serra says he is excited by the challenge and goal satisfaction that has been provided by his appointment.

"The professionalism of the Commodore team, combined with the excitement of new products becoming available ensure that the next five years will reflect the major growth of Commodore during its first five years in Australia."

Snapshot Copier

This is the first of my monthly `news` columns for the Commodore 64. This month I will discuss a great new copier, the SNAPSHOT-64.

The SNAPSHOT-64 copier is even more advanced than the ISEPIC. Those of you who have seen the ISEPIC in operation will know that it does a great job, on a heck of a lot of software, but you may have found some programs that the ISEPIC couldn't `Break Down`.

SNAPSHOT-64 comes complete with cartridge, a very comprehensive and easy-to-follow manual, and a template which fits over the function keys. The copying process is extremely simple :-
1. Insert cartridge and power-up.
2. Hit cartridge button and push F3
3. Load program to be copied (from tape OR disk).
4. Reset drive and insert blank disk.
5. Hit cartridge button and push F1 - the program is then saved onto dis
6. When saved, enter a `Filename` and the process is complete!
Easy isn't it!

Now copy the program from your work disk to a `archive` disk and you never need the SNAPSHOT cartridge again for that program. Another little feature provided for more experienced users i: a mini-monitor which displays the status of important registers and memory locations on entry, then you c examine code, and later resume progra operation if you wish.

Cracks More Programs

Over all, the `SNAPSHOT` is a superior copier which will `crack` mc programs than other copiers I have seen. I even found that it would back-up a couple of my latest titles which had detected the presence of ISEPIC in the expansion port.
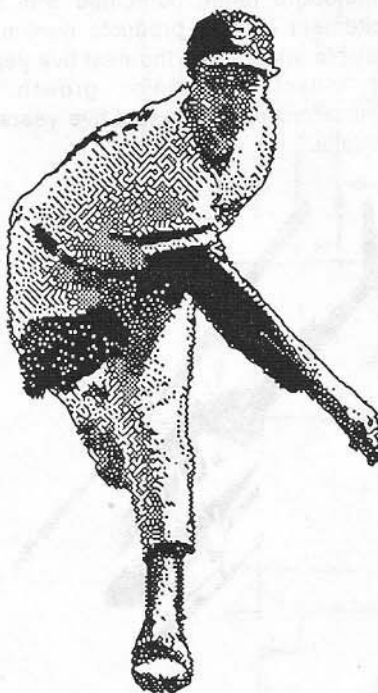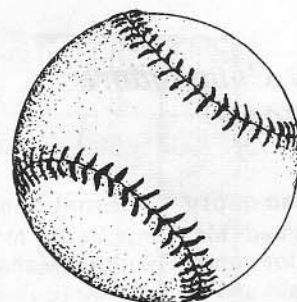In summary, Snapshot is a `snap`, so you need a copier it's a great choic

HOT STUFF

Hardball

Designed by: Bob Whitehead

Sports games have always been popular and Baseball is one of the American favourites, so it was not surprising that many Baseball games were produced for the 64. Having seen most of them, I can easily say that *Hardball* is by far the best, and most realistic. *Hardball* combines excellent graphics, impressive music, and the realism necessary to make this the best Baseball game.

The game can be played by either one player against the computer or two players. The two teams consist of the All Stars and The Champs, with a full bench of substitutes as well. The game is not just an arcade game relying on good eye-hand co-ordination, but also includes the element of strategy, because as a player you also take on the role of

manager. As manager it is up to you to decide when to replace the pitcher, make field changes and when to use substitutes.

The graphics are something to be seen! The field is split into three views, the batter and pitcher, the right field and the left field. When batting, your view is from behind the pitcher, but as you hit the ball the view switches to either the left or right field depending on where the ball has gone. The view screens follow the ball to

allow the fielder to retrieve it. A little box with the diamond is provided for the batter if he is running for first base and the ball is out near 3rd base on the right field. As the ball is thrown, the view

changes and you get to see the last ditch slide to make it safely to base.

Controlling the fielders is very simple, the game automatically selects which fielder to move and then it's just a matter of moving the man to the ball and picking it up. You return the ball by pointing the joystick in one of the four directions to return it to whichever base you want.

When pitching, the pitcher has four options, although it depends from pitcher to pitcher, such is the realism of the game. The different pitches available include: Fastball! (straight and very fast), Fastball (straight and fast), Offspeed (straight), Change-up (straight slower), Curve Ball (big sweeping curve), Screwball (opposite curve direction to curve ball), Sinker (Ball drops - curves down), Slider (similar to curve ball, except curves at last moment). All these options make pitching a breeze, but batting very difficult. As well as the

above pitches, you can decide where you want to pitch the ball, either high, low, inside, or outside.

Batting is very difficult because of the wide variety of pitches the pitcher can use. However you still have a few choices to combat the pitcher's arsenal, either Bunting or a normal swing and either swinging high, low, inside, outside or normal. I found batting very difficult against the computer - but not impossible. When playing with a friend we ended up making a rule - no curve balls etc, fast balls only. This made the game very interesting as it came down to a test of timing against fielding skills. Unfortunately the computer does not have a difficulty setting, and so playing him is virtually useless.

Overall this is the best Baseball game for the 64. It has magnificent graphics, good quality sound and excellent playability. It also combines the element of strategy found in other baseball simulations, making it an excellent all round game.

Commodore 64
Game : Hardball
Publisher :
Accolade
Distribution : Ozi Soft
Price : $34.95

Arcade/Strategy

Graphics	: 94
Sound	: 86
Originality	: 82
Presentation	: 90
Addictiveness	: 80
Value For Money	: 82

Never Ending Story

I am always amazed at the number of films, books, and musical scores which are turned into computer software. Surely by now they must realise that it is not an instant recipe for success. In this instance a popular family film has been made into a technicolour adventure. Taking up two double sided cassettes, the saga is not to be brushed off lightly as just another adventure.

In the world of Fantasia, something is wrong. Or should I say nothing is wrong, because 'noth'ingness' is all consuming, and someone must rid this land of Fantasia of it. If that sounds confusing, well good luck to you in understanding the games theme. It is better if you have seen the movie, but then so are most of these silverscreen games.

You take on the part of Atreyu, a small boy from the plains, who is the last hope for this wonderful land on the brink of disaster. Other characters in the movie

also appear in the game. Judging from the vocabulary it is possible to interact with these, using commands such as SAY, ATTACK, HIT and perhaps SMASH would be a good one too. My attempts at some form of intelligent conversation failed.

The documentation informs us that the program devotes more room to game data, rather than wasting space making it understand more English like sentences. It certainly has some great pictures, but really, shouldn't adventures be easy to play rather than just look that way? In all *Never Ending Story* has around100K of code and data, broken into parts which must be played in order.

Your screen is divided up into three areas. The top is a background scene, with a picture of your current location and any objects you are carrying overlaid on the left and right sides respectively. In the centre is a description of any vital things happening or visible at the moment, and below that appears the command line.

I found the gothic text was a real eye strain to read after a while, especially

since my colour monitor tends to smear the colours slightly. Many colour televisions will do similar. Overall the graphics were excellent, although at times I wondered just what it was I was looking at. A brief bit of exploring quickly revealed a good sized adventure with plenty to do and see.

Everything happens in real time, so as you wait and ponder on problems, time will pass with the message 'you wait' displayed on the screen. When typing I found the game has a slight problem with keybounce, often registering several keypresses when you only intended one. Overall it was well presented, with clear concise documentation for both beginners and seasoned adventurers alike. This one is a hit.

Reviewd by Andrew Farrell

Game : *Never Ending Story*
Publisher : *Ocean*
Distribution : *ISD*
Graphics Adventure

Graphics	**: *92***
Originality	**: *88***
Presentation	**: *90***
Addictiveness	**: *88***
Value for Money	**: *90***
Overall	**: *90***

NATIONAL TOP TEN

February

1. **The Way of the Exploding Fist - Melbourne House**
2. **Elite - ISD**
3. **Winter Games - ECP**
4. **The Island Caper - OziSoft**
5. **Super Huey**
6. **Kennedy Approach - OziSoft**
7. **Elevator Action - ISD**
8. **Goonies - OziSoft**
9. **Law of the West - OziSoft**
10. **Zorro - OziSoft**

Expected Hits

Fighting Warrior - Hard Ball - Fight Knight - Rockfords Revenge

New Products

Anitech

Supplied complete with a built-in Commodore interface and necessary cable and connectors, the new Riteman C+ dot matrix printer from Anitech is claimed to completely match those Commodore features of convenience, versatility and economy. Operating at a print speed of 105 c.p.s., the C+ is able to print all 82 Commodore graphics characters as well as the standard 96 character ASCII set with true descenders. In addition it can print white characters on a black field and has four international character sets.

Unique to the Riteman C+ and its sister model the F+, is a frontloading design, a easier and more versatile system than most. Not just because it keeps continuous-feed paper away from entangling cables and connectors or that it eliminates positioning and aligning problems. This revolutionary design allows plain paper of any thickness to be used, even card stock, as it does not bend the paper down and around like other printers. Raised up off the table by its built-in stand, the Riteman C+ allows continuous-feed paper to be stacked right under it, thus saving table space.

Retailing at only $559.00, the Riteman C+ is not only a natural for all Commodore users but for many more besides due to its additional built-in Epson-compatible software.

For more information, contact your nearest Riteman dealer or local Anitech Head Office on (02) 648 1711.
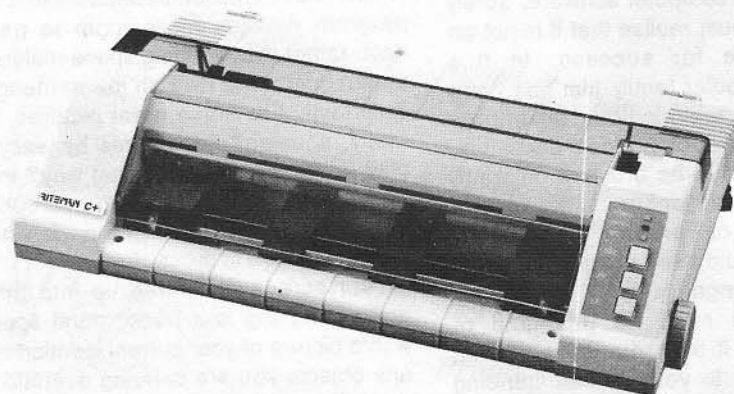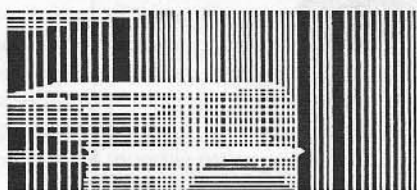
## Full 1200 baud modem upgrade under $250

Australian manufacturer, Avtek Electronics, have done it again with the release of a high speed (1200/1200 baud) enhancement for their popular Multimodem II. The Multimodem already supports all the usual standards (300/300, 1200/75 and 75/1200 baud rate). The new standard is available as a built in hardware addition to the Multimodem, providing the highest speed currently available for data transfer on public telephone lines.

The price of the all standard (V21, V22, V23) Multimodem will come as something of a shock to people used to seeing prices of $1200-$1500 being asked for modems only providing the V22 standard alone. The price for the complete multistandard Multimodem II, with V21, V22 and V23 stadards at the flick of a switch is $699 including sales tax, so Avtek can expect to be selling a lot of modems.

According to Phil Gleeson of Avtek, we are likely to see a lot more of the high speed (V22) sstandard in the next few months. The 1200/1200 standard is "the only way to fly" according to Phil. In the United States, the standard is very popular, and looks like taking over

entirely in the long run. "With heavy use, the 300/300 baud standard is simply too slow. After all, it was designed for use with the early acoustic coupler modems, and it still does a good job in this limited role. The 1200/75 rate used for Viatel is a compromise, with inherent problems."

The Multimodem is unique in providing a built in expansion bus. The design has allowed the addition of the very advanced V22 circuitry to be a quick and easy addition, with no major redesign. It also means that existing owners of Multimodem IIs can quickly and economically upgrade. "Unlike same people, we don't build obsolescence into our modems" says Phil.
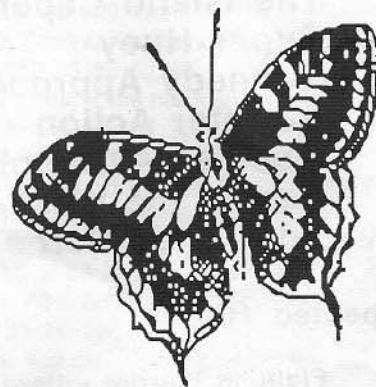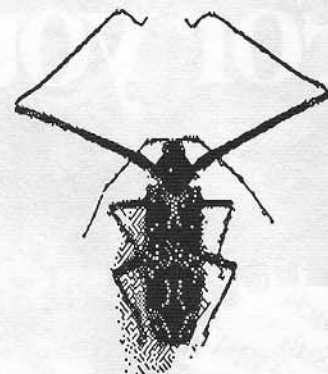
Cockroach Turbo Rom

Designers: Ralph Down & Stu Burrows

The boys from Cockroach began work in the Turbo Load field early last year with the Cockroach Turbo 64 Editor. Having produced a very successful product, they didn't rest on their laurels, but kept working to improve their turbo system. They eventually came up with the Turbo Rom, which at $42, looks as though it's going to knock the Turbo 64 Editor, and all other turbo systems, off the market.

The Turbo Rom is a 16K chip which is installed in the computer replacing the 8K Kernel/Basic chip. However only 8K is ever used at once. The 16K is split into two 8K Blocks - 8K for the standard Kernal/Basic Rom and another 8K for the revised Turbo Rom Kernel/Basic. A switch is fitted to the Rom to allow for the switching between the two banks. The revised 8K Kernel/Basic does not include code necessary for use of the Cassette port or the User port; the existing code was replaced by some more useful code for the disk user and to provide room for the Turbo routines.

Installation

Installation can be either a simple matter or a job for a qualified technician. If your chips are soldered in rather than socketed, then a professional is required to de-solder the existing chip and replace it with the Turbo Rom (this is the case for about 20% of all 64's). If you are lucky enough to have socketed chips then you can have your Rom installed in minutes. Installation also requires drilling a small hole in the computer's casing for the switch. The instructions for installation are very precise and also include diagrams, making installation for the non-soldered chips very easy.

Speed

'But is it quicker than the standard 1541?'. Well, the answer is definitely YES! In fact speed increase factors of up to six times normal speed have been achieved. Of course a lot depends on the program being loaded; the longer the program, the better the speed increase. However some commercial software such as EasyScript employ special load methods which unfortunately are not helped by the Turbo Rom. Almost every program is compatible with the Rom, but compatibility is no problem because a simple reset of the computer and a flick of the switch banks in the standard Kernel/Basic code, leaving you with a slow, but 100% compatible, 1541.

Handy Features

The Turbo Rom also includes a few other very handy features, such as inbuilt Dos Wedge, and a few extra commands such as Zap, Old and Mon. The Dos Wedge is immediately activated when the computer is powered up and allows for easier access to all disk functions. All disk commands usually sent via the syntax of:- 'OPEN 15,8,15,"command"' can be sent by just typing '@command'. For example to Initialise the Disk Drive is simply '@I' instead of 'OPEN 15,8,15,"I".

Another helpful feature is the Fast Format Command, '@F:diskname,id' which formats the disk in 30 seconds instead of the standard 90 second 1541 format.

The disk directory is obtained by simply typing '@$' rather than 'LOAD "$",8:LIST'. This listing can be paused and stopped and the Turbo Rom directory does not destroy the contents of memory as with the standard directory listing.

The Rom also allows for easy loading of the first file on disk. Typing '*' followed by return replaces the old 'LOAD"*",8,1', the load sequence for most commercial software. The Rom includes an inbuilt lo-res screen dump which can be obtained any time by holding down the Commodore Key (lower left corner) and hitting F7.

The Turbo Rom not only increases the speed of Loading, but saving and verifying as well. Also programs saved by the Turbo Rom can be loaded even faster, up to 6.6 times faster than the standard load. This is achieved by the use of a different sector storage pattern.

Compatibility

The Turbo Rom is compatible with most Commodore drives, i.e. 1541, 1570 and the yet to be released 1571, which is very similar to the 1570. However the fast format does not work on the 1570/71. The Turbo Rom is also compatible with the Skai Super Drive, but not the older Skai Disk Drive which is incompatible with just about everything! There are three versions of the Rom, one for the 64,
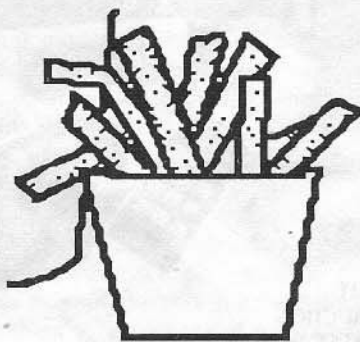
...with new `power plus´ peripherals

New! 1571 Single Disk Drive. $599 r.r.p.
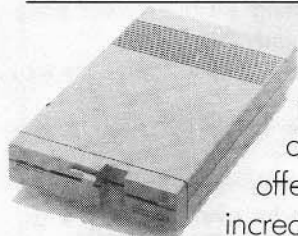
A sleek, high performance disk drive, offering an incredible 340K storage capacity. Will read many common CP/M disk formats — ideal for productivity applications.

New! 1901 Colour Monitor. $599 r.r.p.

High resolution 34cm (14") screen compliments the advanced video capabilities of your Commodore 128 computer. Comes complete with selectable 80 column (RGBI) and 40 column (composite video) inputs and built in sound capability — offering you excellence and quality.
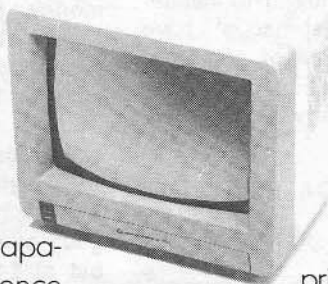
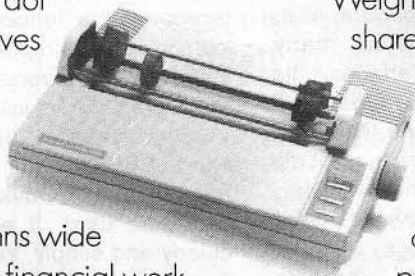## New! The Commodore Mouse. $149 r.r.p.

Ideal for learners and professionals alike! With the Commodore Mouse you don't even have to use the keyboard to get your Commodore 128 working. The Mouse serves as a pointer and input device in conjunction with programs like Jane, to let you move words, draw pictures and issue commands.

New! MPS 1000 Dot Matrix Printer.

High speed dot matrix printer gives you 100 cps to draft reports, 40 caps in near letter quality mode. 80 columns wide for financial work. Bi-directional, high resolution graphics. Great printer power at a low, low Commodore price!

New 256K/512K Expansion Cartridge.

Simply plug into your Commodore 128 and it becomes even more powerful.
256/512K Expansion Cartridge gives you power to spare to run the big software packages or write your own programs.

New! The Commodore 128D. 'Takeaway Power' $1099 r.r.p.

Simply snap the keyboard onto this great new computer and take the carry handle — the 128D transportable goes anywhere your work or play takes you.

Weighs around 8kg, and shares all the 128's features, including 512K expandability.
Gives you real 'takeaway' home or office computing power!

The 128D transportable — power to go!

C= commodore
gives you the power!

*CP/M is a registered trademark of Digital Research, Inc. Runs Version 3.0.

TEAM 2660ABC

Cardco G-Wiz Printer Interface

The latest entry to the printer interface market is the Cardco G-Wiz Parallel Printer Interface.

The G-Wiz joins the Cardco range, but unfortunately does not quite live up to its name. While being able to perform all its functions very well, it lacks many features found in other interfaces. Its features include a buffer, although I suspect only a very small one (its size is not documented in the manual!), eight dip switches, "Quote Mode", nine secondary addresses, software method for changing dip switch settings, and the ability to support Underlining, Subscripts, Superscripts and Bold Facing.

Installation of the G-Wiz is very simple. The manual takes you through the process step by step so even an inexperienced user should have no trouble hooking up.

The G-Wiz connects to the serial port and draws its power from the cassette port, while still allowing cassette operation. The interface plugs straight into the centronics port of the printer, leaving the dip switches in an awkward position, at the back of your printer. The cable leading from the interface to the serial port and the cassette port is of an adequate length, allowing the printer to be positioned at quite a distance from the computer.

The G-Wiz's performance is very good, but it loses out to other interfaces because of its lack of features. When used in conjunction with programs such as *Easyscript* and *Superbase,* it performed flawlessly. So too with *Printshop,* although it seemed to be slower than other interfaces. Actually any program designed for the Commodore printers should work happily with this interface.

One of the best features of the G-Wiz

is the "Quote Mode". This mode is used for dumping program listings. Instead of printing all the weird and wonderful Commodore graphic characters, the G-Wiz substitutes a few letters to represent the function, for example a 'cursor down' is represented as "[C/DN]" instead of a reverse "q". This makes reading a program listing a lot easier.

The manual for the G-Wiz is nothing short of BRILLIANT! It is very clear and easy to read. Obviously aimed at the first time user, it explains everything clearly and simply, yet at the same time conveys the technical information the experienced user demands. This manual would have to be the best manual I have ever read for any piece of computer equipment. Its explanation of Escape Codes and their uses was very well
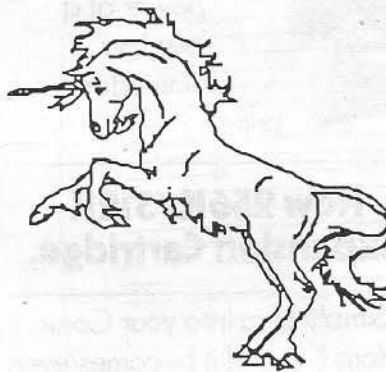
written, unlike some other efforts to explain this important but difficult topic.

The eight secondary addresses provide the different modes for the interface. These modes are :-
* Normal Printing - Upper Case /Graphics Mode with linefeed
* Normal Printing - Upper Case/Graphics Mode with no linefeed

* Hexadecimal Mode - All characters sent to printer are printed in their hexadecimal equivalents
* Transparent Mode - with linefeed
* Transparent Mode - without linefeed
* Normal Printing - Upper/lower case mode with linefeed
* Normal Printing - Upper/lower case with no linefeed
* Also a 'Lock Mode' for each of the above modes.

Some of the above secondary addresses can be overridden by a dip switch setting. For example when dip switch 4 is set on, no linefeeds are sent under any circumstances. Just the same as dip switch 2 locks the interface in Transparent mode. The other secondary address not mentioned above, allows the user to examine the dip switch settings under software, and change them without actually flipping the switch.

The G-Wiz interface is a very neat, hard working interface, but in comparison to the Xetec Super Graphics Interface which we looked at previously (December issue), it is well behind in value for money. It lacks the flexibility of the Xetec's huge buffer, and fonts. The command channel of the Xetec is another valuable feature missing on the G-Wiz, which is why it falls short of the Xetec standards.

The price is also somewhat steep; at around $100 this interface would be a good proposition against the Xetec Jnr, but at $139, it comes up against the Xetec Snr and loses badly on value for money.
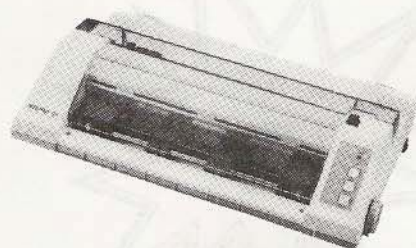
Ratings

Performance:	8/10
Ease of Use:	8/10
Features:	6/10
Documentation:	11/10
Value for Money:	6/10
Overall:	7/10
Price:	$139.00
Available:	OziSoft

Philip Dean.

Starring Wordstar

by Gene Stephan

One of the initial reasons I gave for using *Wordstar* was the ability to modify and customize. Last month we looked at ruler lines and the ways in which these could be changed quickly so that text formatting could be carried out with a minimum of fuss. Occasionally, it is worth setting a separate program, disk to a specific format so that when WS is run, the default parameters are set for that specific task. For example, when the text of this column is being entered, I use a right margin of 75, have right justification OFF and am aggravated by HELP menus. Clearly this deviates from the usual letter writing set-up.

To change WS to do our bidding requires 'patching' the code. Ordinarily, patching would be beyond the scope of the vast majority of users, however with WS the locations are documented.

Files required :
INSTALL.COM
WS.COM (or WSU.COM)
WSMSGS.OVR
WSOVLY1.OVR

For clarity, all *Wordstar* messages will be preceded with a '-'. So, boot CP/M, copy your WS disk and using the copy, let's give it a try.

A>INSTALL <RET>

-Do you want normal first-time. installation of Wordstar?
-Y = Yes N = Display other options) N

From the 'Wordstar Installation Options Menu', select D which modifies the filename of our choice.

-Filename of Wordstar to modify?
WS.COM

Proceed through the terminal and printer options using 'U' (no change) to move speedily if this is not your first install.

-Are the modifications complete? N

Now we are at the point of patching. Remember that from now on, all thought must be in hex and not decimal. The 'H' following the numbers is a subtle reminder of this. The first location below

```
-Location to be changed  0360
-Address: 0360H  Old Value: 03H  New Value: 0

-Location to be changed  0380
-Address: 0380H  Old Value: 40H  New Value: 4A

-Location to be changed  0386
-Address: 0386H  Old Value: FFH  New Value: 0

-Location to be changed  03CD
-Address: 03CDH  Old Value: 00H  New Value: FF
```

deals with the initial level of HELP. A new value of 0 gives no HELP whereas 3 is the maximum. Values 0 to 3 are valid.

Location 380 deals with the width of the screen. The largest number allowable here is (screen width - 4). In the case of an 80 column card, the maximum allowable is 76 or in hex 4B. That is not to say that longer lines are not possible. Type any letter you like say 90 times, starting at column 1 and no spaces. The screen will actually display a different text window.

Location 386 is a toggle for right justify on or off. If *Wordstar* finds FF in this location, it will right justify the text. If 00 is found then the right will be ragged.

Location 3CD is a print location. If you are the type of person who does not believe in reading prompts and wildly hits <RET> when going through the print queries, then this is your location. If *Wordstar* finds FF here, it will default to

Customization Locations

LOCATION	VALUE	NOTE‖VALID SETTINGS
037F	00	Initial left margin column. 0 to 3
038B	FF	0 will hide the ruler line
038C	FF	dynamic page break. 0 to disable
038D	FF	0 will hide line of ——s to show page
038E	01	single line space. 1 to 2 etc
038F	00	block move. FF to default column move

PAUSE between each page printed. It will save your roller from a good deal of ink.

A few other locations which may be of interest are detailed in Table 2.

When you have completed your INSTALL, enter a 0 for the location to change and your WS file will be updated on disk. Run the WS to see the difference. While on the question of printing and print options, you may be interested in the short summary of the so called 'dot' commands. These are used in the body of your text and direct WS to print in a variety of ways. If some don't seem to work, then check the INSTALL of your printer. Note also that for some of these commands your printer must have proportional spacing.

Command	Function	Units	Default value
Vertical spacing and layout			
.LH n ***	Line Height	1/48 inch	8 (48/8 = 6 lines per inch)
.PL n	Paper Length	lines	66 lines = 11 inches
.MT n	Margin at Top	lines	3 lines = 3/6 = 0.5 inch
.MB n	Margin at Bottom	lines	8 lines = 8/6 = 1.33 inches
Page breaks			
.PA	start a new PAge		
.CP n	Conditional Page	lines	
.PO n	Page Offset	columns	8 columns = 8/10 = 0.8 inch
Page numbers			
.PN n	Page Number		1
.OP	Omit Pagenumbers		
.PC n	Page number Column	columns	col. 33 (centre of 65 col. page)
Headings and footings			
.HE message	Heading		blank
.HM n	Heading Margin	lines	2 lines = 2/6 = 0.33 inch
.FO message	Footing		contains page number
.FM n	Footing Margin	lines	2 lines = 2/6 = 0.33 inch
Miscellaneous			
.. message	Comment		
.IG message	Comment		
.UJ n ***	microjustification	0 = OFF) 1 = ON)	ON (adds micro-spaces to justify the right margin)
.SR n ***	Subscript and superscript roll	1/48 inch	3 = 3/48 inch
.BP n	Bidirectional Print	0 = OFF) 1 = ON)	ON (prints left to right, then right to left)

Line heights *** only on printers which support micro-spacing

Command	lines/inch	Command	lines/inch	Command	lines/inch
.LH 1	48.0	.LH 8	6.0 (single)	.LH 16	3.0 (double)
.LH 4	12.0	.LH 9	5.3	.LH 18	2.6
.LH 6	8.0	.LH 10	4.8	.LH 20	2.4
.LH 7	6.8	.LH 12	4.0	.LH 24	2.0 (triple)

Character spacings (pitch) *** only on printers which support micro-spacing

Dot command	Pitch characters/inch	Dot command	Pitch characters/inch
.CW 6	20	.CW 13	9.2
.CW 7	17.1	.CW 14	8.6
.CW 8	15	.CW 15	8
.CW 9	13.3	.CW 16	7.5
.CW 10	12 (alternative-pitch)	.CW 17	7
.CW 11	10.9	.CW 20	6
.CW 12	10 (normal pitch)	.CW 24	5

A study of unknown and known phenomena

Especially relating to the 1541 and speeding up dual drives

by Andrew Farrell

Could this turn into a regular installment about the eighth wonder of the world? Why does the 1541 work? In this and other studies of known phenomena, we at *The Australian Commodore Review* have found no logical explanation for some of the many strange habits of this peripheral. However, now we will attempt to ascertain the real reason for some of these occurrences and simultaneously invite you, the avid reader, to send any strange happenings you've had the privilege to witness to us.

Unarguably the most famous, well documented event, which occurs whilst using this beastie involves the use of the SAVE command. Others would include relative file usage and some of the 'U' commands.

To combat the growing surge of questions from users regarding these subjects, we have set up stringent test laboratories using the latest wind tunnel facilities and high temperature testing

units available. In these highly sophisticated technical control centres (read disorganised apparition of absent minded programmers) we will unlock the secrets that lie beyond that humble looking beige exterior.

Speeding up Dual Drives

This article deals with speeding up dual drives - examples are given for the 4040, 8050 and 8250. Unfortunately, the method given here will not work on the 1541, because the method we are using does not exist on the 1541.

In the dual drive memory map, at location $1000 (4096 decimal), to location $1003 (4099 decimal) are three interesting variables. (Note: 8250 values also apply to the 8050 drives).

occurs. For instance, set this to 5 on a 4040 and then open a file to disk with the drive door open to cause an error. You will hear a buzzing noise instead of the familiar "WHAPWHAPWHAP" noise a 4040 makes. Also affected is the stepping rate; if you send the head from track 1 to track 35, you will notice a significant increase in stepping speed. A safe value for the 4040 is 9, and for the 8050/8250 is 2.

We can also change the Motor Acceleration Delay rate. When you tell the drive to access the disk, it turns on the drive motor, then waits for a certain amount of time for it to accelerate and stabilize to exactly 300 RPM. We can change this value to change how long the startup delay is. Safe value for all drive types is 2. The value has the most visible

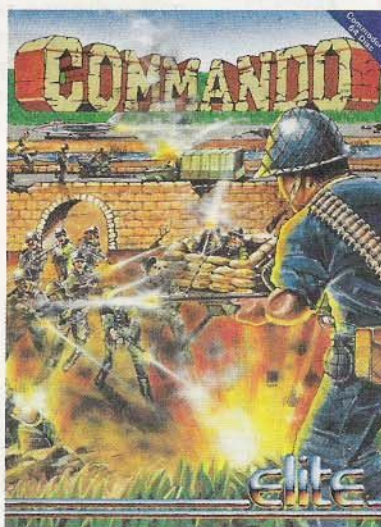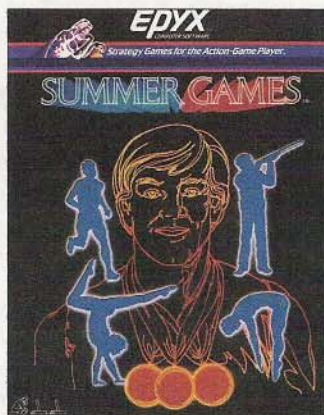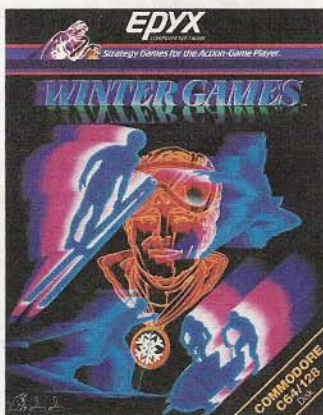| Location		Contents (4040)		Contents (8250)		Label	Description
Hex	Dec	Hex	Dec	Hex	Dec		
$1000	4096	$0A	10	$03	3	ID	Interrupt Delay
$1001	4097	$0D	13	$0D	13	MAD	Motor acceleration delay
$1002	4098	$30	48	$30	48	MCT	Motor cutoff time

We change the contents of these locations to change the speeds of the different functions of the disk unit. We can change the value of the Interrupt Delay, which increases or decreases the overall speed of the drive, including the transfer rate of the drive. Very small delay rates will cause read errors and the drive won't read a thing from disk. The most noticeable thing this value changes is the speed at which a "drive bump"

effect, as it decreases directory search times, and generally speeds all internal disk access up. Using these two functions, you can read the directory from a 4040 with about 1 second of drive motor time. After setting these two locations and requesting a directory, the 4040 will do a drive bump, move to track 18 and seem to stop instantly. However, it will continue sending directory data until it has finished the directory.
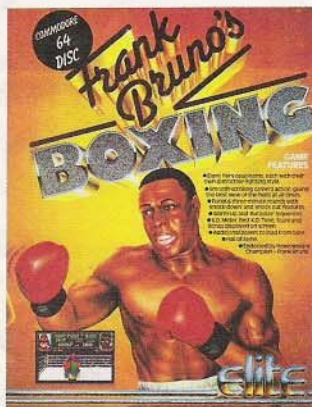
The last directory is the Motor Cutoff Time. This is the delay the drive uses after a file is closed, or after data stops flowing. Normally, after you finish using the drive, it will whirr for a few seconds longer, even though it isn't doing anything. By changing the value in this location you can control how long it will continue to spin the disk. If you are used to the length the 4040 spins, and you then start to use an 8250, you will notice that the 8250 seems to take forever to stop spinning. Using all three locations, it is possible to change the entire speed characteristics of the drive. Following is a table showing the safe values for each location, followed by a short program that can be used to change the values easily and quickly.

One last note: I would expect that the same method should operate correctly on the SFD-1001, but don't quote me on that as I have never used one of those units.

Location		Lower Limit		Upper Limit	
Hex	Dec	4040	8050/8250	4040	8050/8250
$1000	4096	$0A 10	$03 3	$F5 250	$F7 252
$1001	4097	$02 2	$02 2	$FE 254	$FE 254
$1002	4098	$02 2	$02 2	$FE 254	$FE 254

Note: The above Lower Limit values may not work on all drives - experiment. Also, speeding up your drive may make it less reliable; don't trust important data or complex disk functions to a hyped-up machine.

```
10 rem **program to change velocity
20 rem **values of dual drives
30 rem **by scott maclean
40 open 1,8,15:rem **open command channel
50 print chr$(147)
60 input " Interrupt Delay " ;id
70 input " Motor Accel. Delay " ;mad
80 input " Motor Cutoff Time " ;mct
90 print#1, " uj " :rem **reset drive
100 print#1, " m-w " chr$(0)chr$(16)chr$(3)chr$(id)
     chr$(mad)chr$(mct)
110 rem **sets up at locations $1000-$1003
120 close 1
```

```
10 rem **quick program to speed up
20 rem **dual drives
30 open 1,8,15:rem **open command channel
40 print#1, " uj " :rem **reset drive
50 print#1, " m-w " chr$(1)chr$(16)chr$(2)chr$(2)chr$(2)
60 close 1
```

Multiple Directory Pattern-Matching

Commodore's filename pattern-matching feature for disk directories is more powerful than many people are aware. One little-used ability is the use of multiple patterns in a directory listing. For example, you could get a list of all files on the disk in drive zero starting with either the letter "S" or the letter "D":

LOAD"$0:S*,0:D*",8

Up to five selective directories may be used in a single directory filename.

More Bugs

When I attempt to open a relative file with a record length of 58 (ASCII code for colon) I get errors. It appears that the 1541 likes to think of the colon as a delimiter and since between the comma and the colon is nothing, you get an error for opening a file of record length zero. Maybe this will give Commodore the hint to tear into their source and fix this along with a few other problems (like SAVE@, if we find enough bugs.

The "UJ" command sent via the command channel is being used by some widely sold software. Some drives (most of them) require three seconds for the reset, but some software only waits one second or less. This causes the computer to "hang up" when further disk commands are given. This can occur when the programmer writes a routine in BASIC, then compiles and does not compensate for the speed increase in the FOR..NEXT time delay loops.

MOTT

Music Workshop News

by Ric Richardson

Two months or so have passed since a certain young aspiring computer writer (me) made big noises about a musical future for the home computer. Here we are and my shot in the dark has opened up a whole new area of interest.

Not only have you, the readers of our magazine, reacted, but the music industry has also become interested.

Recently I was invited to the office of a well known music company and asked, "Are you responsible for this?" The page was open at the Music Workshop.

The conversation continued, "We have spent lots of time and money over the last few months to get our retail dealers excited about computer aided music. Then you come along with a few articles like this and we get all these letters from our dealers saying we should do something about this, it really sounds like a good idea."

With this kind of thing happening the scene is set for computer music to really take off. More on this later, now for some news.

(* Please note that the *Australian Apple Review* is a sister publication to this and shares many of the stories and articles if they are applicable).

Musings

Roland Corporation are just about to release a C64 version of their Apple based MUSE program. The format and facilities are said to be exactly the same as the Apple version with only a small loss in memory capacity. (Please see January Australian Apple Review for details; I hope to review the C64 version shortly in this magazine.) It should also be comparable in price to the Apple version. Hopefully, a little cheaper.

They are also planning to release an updated interface for this new software. The main advantage this unit will have over others is that it will most probably sport a MIDI THRU socket. MIDI THRU socket? Well, if you have ever used any of the interfaces presently available, you
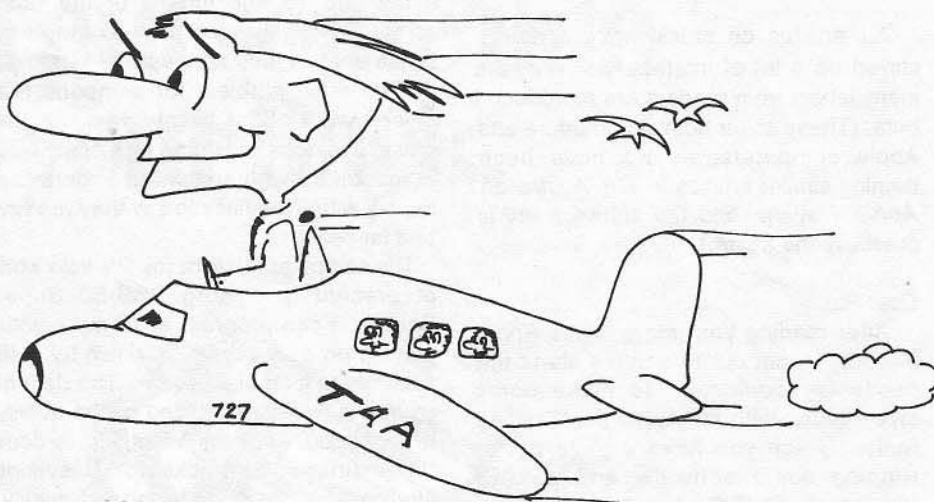
ACR Flies South

will find no provision to enable the interface to send controlling messages from your keyboard to both the computer for recording, and to the sound module so that you can hear what you are playing.

Although not a complete solution, this can alleviate much of the cable swapping that has been necessary in the past.

For further information: Chris Cummings, Roland Corporation, 2 Cross Street, Brookvale, NSW 2100.

Rosey future

Last month I received a phone call from Rose Music, distributors of Yamaha musical instruments and sound gear. Steve Smith, a technical sound consultant to bands such as "Kids in the Kitchen" and "The Little River Band", swiftly set about arranging for someone from our office to get down to Victoria to their head office, to talk about computer-aided music making and to get a good idea of what they could offer the computer based musician. They could see the wide scope of what we have been doing in the Music Workshop, and with trends overseas swinging to this area in the music industry, they want to get behind the idea and do whatever they could to help.

Beside the Yamaha synthesisers and drum machines, there are also the PASSPORT brand software packages they distribute in Australia. If circumstances permit, we will try to report in detail on that trip south.

Brash discovery

While all these other things were happening, yet another company was showing interest in our Workshop Project. In Sydney, all they look to be is a chain of record shops, but Brash's are in fact one of the biggest music retail networks in THE WORLD, let alone Australia. Part of this quiet giant is a project called Brash's Rockboard Room. A feature of many Brash's music stores.

It consists of a wide variety of synthesizers, drum machines and software packages mainly geared for the 64/128, in an area set up for easy

demonstration and display.

One of these packages is designed for those who have zero musical ability but have the patience to input notes in much the same way as you would enter lines of program instructions. This program, the SIEL music composer, also has a great demo for the aspiring musician to reach for as a goal - a classical piece by the Maestro himself, Bach.
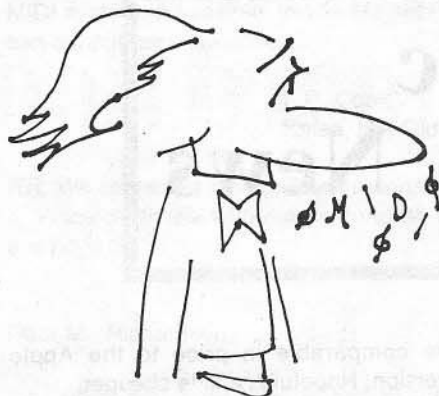
Next few months

To keep up with all this interest we will be looking at expanding the workshop over the next few months to include a regular news section, space for readers' letters and enquiries, and a series of articles to fill you all in initially with an overview of what is available to make sweet music. Then we will endeavour to compare and examine in detail the uses and musical possibilities of the various pieces of equipment.

In the meantime I will continue with my crusade to convert the whole world into four billion computer-crazed musicians!

Music Letters

Our articles on music have certainly stirred up a lot of interest. Some of the many letters from readers are reproduced here. (These cover both Commodore and Apple computers, as we have been running similar articles in *The Australian Apple Review,* and the software etc is practially the same.)

Dear Ric,

After reading your story in the Apple Review, I went out to enquire about the necessary equipment to make some sweet music with my Apple IIe. Reading further, I see you have a prize up for winning some software and a MIDI interface. I would like to submit my name and address as above.

I have worked LIVE with a computer, doing a solo act for the past year. The computer I have used is very limited with regards to set patterns and sequences. I think the Apple set-up sounds exactly what I need to free me from the bondage of such a mechanical sounding device.

I was born in Canada and spent about eight years touring with various bands in the U.S.A. Some of the artists I have worked with are the Steve Miller Band, Chuck Berry, Sonny Terry and Brownie Magee, the late and great Muddy Waters, B.B. King and the Blues Brothers Revival Band, which I toured around Australia with. You may tell from the artists above that I am heavily into the blues.

The music I play at my solo jobs has a fair content of blues and I of course inject a few top 40 and middle of the road songs. This gives me a good range of styles even in the Latin feel.

The main problem for someone like myself, with about twenty years in the music business, is finding musicians with at least the same amount of experience to play with. Needless to say they are few and far between.

The computer I use for my live solo work at present is a Korg PSS-50 Super Section. I can program all of my night's playing on data cassettes which take 45 seconds to load eight songs. The data of course is digitally recorded so the quality is very good. So good in fact, I have done the instrumental tracks for television studios which must be broadcast quality. The problem, so well pointed out by David Stevens of the Roland Corporation, is the

restrictions of only a pre-selected drum and bass sound as found on most drum machines and organs.

The one very important aspect of the computers overlooked by DS, is the educational side. I am studying education at the James Cook University, now in my final year and have used the computer in schools to teach music extensively. It is absolutely magnificent. I even arranged a concert for the heads of department and they were all very impressed. To have the power, not only to arrange and play a piece of music, but also to delete and add parts at random to demonstrate the effects is truly a boon for teaching music in the classroom.

The other side of the coin is self-teaching through computers. What I do is program a whole song that I want to learn and then add the vocals, lead and rhythm guitar and perhaps saxophone, flute or harmonica. Each part can be rehearsed over and over again until perfect. There are no musicians to complain of boring repetition for the sake of the vocalist. The computer never complains or tires. The computer can really keep the musicians on their toes, as it is a faultless timekeeper. I hadn't played with a backup band for about six months and when I finally did, there was a marked difference in the quality of my playing.

I have been a band leader for 15 years and had a wide variety of musicians that I have been required to play with. One of the major problems of a band leader is to teach the repertoire to a new member. If

that member is a key person, like a drummer, it would be of utmost importance to train him as quickly as possible. Time is money, not just to the band leader, but everyone in the band as well as agents and promoters. For a band leader, the job is not only time consuming, but extremely boring, and trying to vocalize a drum part, (bum-diddy-bum-diddy-bum-bum), or tap it out on the top of a Vegemite jar, is not only vague but again, time consuming. This is

where the computer shines. The easiest thing in the world is to input the drum part on a computer and play it back so the drummer knows exactly what to play.

There are many songs I have kept with me in my repertoire and each time a new drummer steps into the group, these songs change again and again, until perhaps I hear them played back on tape. Most of the time it is a great shock to hear how the songs have been mutilated or distorted into something unrecognizable. The computer certainly alleviates this great problem.

The one and only problem I have found working solo with the computer, is the great need to have another musician to inspire me to different directions and stimulate the music. I think this side of music is reciprocal between musicians in a rather symbiotic relationship.

Music, like other forms of expression, is undergoing a dramatic change through the advancement of the technological revolution. Musicians who take advantage of the vast amount of knowledge on tap in a computer will enrich their musical expertise and style. The person who ignores it will be left far behind and quite illiterate, not just musically, but in all walks of life. Computers are here to stay and are becoming more and more a part of our everyday lives.

I am studying computer science at university and plan to incorporate the

MIDI system, if possible, in any projects I can submit for assessment.

L.P. Cook
Kelso, Nth Qld

RR. We contacted Mr Cook and recorded a phone interview with him last month - see page 28.

Dear Mr. Richardson,

I have just read your article in the December issue of The Australian Commodore Review with mounting interest and anticipation. Since reading a reference to the MIDI "bus" in an American magazine and then in the June issue of the Review, I have waited for the opportunity to get involved with this new area. I am particularly interested in the system as a hobby, whereas my daughter, a professional musician, is more interested in the possibilities of teaching, arranging, composing, performance and the creation of backing tracks for live performance.

I hope you can do the things you mention in your December article, they seem to fit the bill as far as we are concerned.

I read a number of other magazines devoted to the Commodore, but I especially enjoy yours because of the Australian flavour. Keep up the good work.

Thanks for your articles to date and I am looking forward to your future contributions.

M.J. Hilbig
Largs Bay S.A.

*RR. I'm trying my best to keep those promises.*

Dear Ric,

I have been reading with great interest your articles in MUSIC WORKSHOP. I am interested in setting myself up with a music system similar to what you have been describing. I am currently employed as an Instrumental Music Teacher with the Queensland Education Department

and such a system would need to have some educational value in addition to its entertainment qualities. Therefore I would need to have software available to print out my arrangements. My intentions would be to use it only in my home, but as an aid to my own teaching preparation, and also to help my daughters in their own music studies.

At the moment I am rather confused as to what software would be compatible if I settled for a Roland interface and the MKS-7. For example, I have some brochures which describe the Passport Designs system. Included are the Passport MIDI Interface, MIDI/4, MIDI/4 plus, MIDI/B plus, Polywriter, Leadsheeter, Music Tutor and MIDI player. In other words, can this software be used if I have a Roland Interface rather than a Passport interface?

I would be grateful if you could give me some advice on what you recommend as I am still a little bewildered as to how I can start. All I have at present is an Apple IIe, single disk drive and a printer. I do not
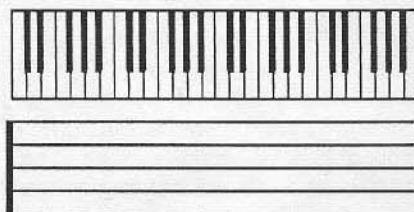
yet have an electric piano. As I do not have the monetary resources to outlay a lot of money, a budget package like the one you are suggesting from Roland would be ideal.

Thanks for giving me some inspiration; the whole idea is so exciting and has so many possibilities.

Ray Jenkins
Springwood Qld

RR. This is one way that manufacturers keep a stranglehold on the market, that in fact the interfaces usually; as in the case of Roland and Passport, will only handle their respective brands, so you have to invest in an interface to go with your final choice in software. Reviews of these will be published shortly. In the meantime

please give me a ring on (02) 398 5111 if you need information.

Dear Ric,

I want to thank you for your article in "MUSIC WORKSHOP" December '85 regarding Roland equipment and the C64.

I am interested in this type of appliaction.

About twelve months ago, I bought a Roland HP400 piano and a Roland JX3P synth. (Both with MIDI). At the time, I was debating between Yamaha and Roland for the piano. The potential of MIDI and scope of Roland won out.

Just three months ago, I had to choose between a dedicated Roland sequencer or a computer that would do the job for me. I chose the Commodore 64 after reading up on the sound capabilities etc.

I need some help, though. Both in the area of MIDI Interface and appropriate software.

My application requirements are as follows:-

1. To have a sequencer that can be overlayed, edited, time corrected etc.

For use
- a) For my own interests in music
- b) To allow my son to practise his drums along with tunes that have been pre-recorded. (He can vary the tempo as he improves etc).

Will the Roland Music Data package do the trick?

Price is always a problem - the way things are shaping up, it would have been cheaper to buy a dedicated sequencer.

Gary Simpler
Herne Hill, Vic

RR. For the C64 there are packages from Seil, Roland "Music Data", and Passport. Each of these sequencer packages have their own advantages. The Roland will certainly do the trick - it is the most elaborate, the most expensive, and you may need to have some experience with multi tracking to use it. Passport and Seil are cheaper and easier to use, in that order, but also lack some of Roland's features.

To Ric Richardson,

I am an avid computer user (SX-64 & Macintosh). Your article "The Next Home Entertainment Revolution" was of extreme interest to me and I hope to see more written on the Commodore and MIDI equipment.

On the strength of your article, I have taken out a subscription to The Australian Commodore Review; and I hope that in the near future you will do a comparative Hardware/Software review of MIDI equipment on the market for people (like myself) wishing to get a basic start in this new extension of using a home computer.

Are you aware of the SEIL sound equipment and software for the 64 imported by Brashs Pty Ltd?

Hope to see more articles soon.

David S. Foo
Elwood VIC

RR. Yes, we know about Seil. Reviews of this and others in future issues.

Muso Speaks on MIDI

by Ric Richardson

Larry Cook is a Canadian musician living in Queensland. He wrote to us about the Music Workshop - see the first letter in the Music Letters section. So we telephoned him to see what else he had to say about computer-aided music.

R. What have you been doing with computer music today?

L. I have a bass player visiting and I was showing him the Roland MKS-7. (A sound module with MIDI compatibility.) He was quite amazed at the twenty different bass sounds you can get from it. The sounds you can conjure up, not to mention the after-touch dynamics that are available on top of that, are fantastic.

R. What would you like to say to our readers?

L. The main thing that I want to get across is the fact that I can verify exactly what you have said in your stories. In my travels, I can remember seeing an organ worth about thirty thousand dollars, a very big one, and I would say that by comparison the MKS-7 just killed it for the variety and quality of sounds that you can get.

R. So you're big on keyboards?

L. I have studied them for a term here in Australia, but I'm a guitarist first.

R. What instruments did you play when you were with "The Blues Brothers Revival Band" touring Australia?

L. Well, I was one of the Blues Brothers up front. So I did the dancing and singing, the fooling around.

R. I thought you were a keyboard player. I remember seeing the Blues Brothers Revival Band at Sawtell.

L. That was one of our best gigs. It had the chicken wire up and the broken bottles. What made that gig really good

*The Blues Brothers
or
Ric and Andrew*

was the way that everybody dressed up as the different characters of the movie. There were heaps of people dressed as the Good Ol' Boys, County Police, and even a whole lot of guys and girls dressed up as nuns.

(Note: the Blues Brothers were a couple of unlikely heroes who saved an orphanage from demolition in the movie of the same name. The film has developed a cult following attracting anybody with a decent sense of humour.)
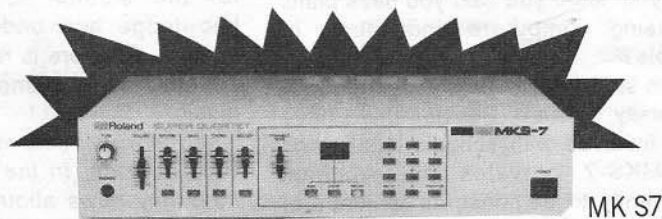
R. So you were mainly dancing and singing?

L. On a couple of songs I got the chance to play guitar and the saxophone and harmonica.

R. With that kind of musical background, why have you become involved in computer aided music?

L. Well, since being with the Blues Brothers Revival Band I have done a series of jobs as a solo performer. Just recently I did three weeks on Hamilton Island, a resort on the Great Barrier Reef, where I played in a restaurant. The sound module I used, the Korg Super Section, has a built in sequencer computer, but it is very limited.

R. In what way?

L. The sounds are great, in fact they are digitally recorded which means you get a really clear sound. But the fact that the whole thing is pre-programmed gives it a mechanical sound.

Basically, it has about 40 or 50 different musical styles to choose from, which you can program a half bar at a time. The other problem with it, of course, is that you can't separate the sounds in the module because you only have a stereo output.

This jumbles all the sounds together so you can't select each part of the module separately and change their sounds with effects and equalization, a necessity if you aren't going to sound boring or want to sound professional.

R. Tell us Larry, why are YOU interested in using a home computer and the MKS-7?

L. Well actually I intend to use the computer as a quick way of making arrangments for songs that I will be playing in restaurants. We're talking about arranging and playing a couple of hundred songs.

Rather than carting the gear all over the country, I intend to make a recording of the finished songs and play guitar, harmonica and saxophone along with the tapes. A home computer like my Apple or the C64 setup with the MKS-7 represents a fast easy way for getting really good sounding songs happening with a minimum of fuss.

You see, I have been struggling for the last couple of years with the button pressing and things involved with having a built-in sequencer like the Korg Super Section, but now after seeing all the other local solo and duo acts change to using pre-recorded tapes, I can see the advantage of that.

They are getting a really good sound because of using multitracking and paying out big bucks in recording studios. They sound like a full-on band.

R. So the advantages are that you can have a recording studio at home, and can add to your repertoire whenever the feeling strikes you.

L. Also consider the way that everything can be setup so you have hassle free operation. For instance, a song like "Bye Bye American Pie", where the tempo is changing all the time and the feel is changing, there are not many sequencer packages that are available below thousands of dollars that could play that kind of song effectivly.

Using the Apple and a decent program, which I have yet to get my hands on, and the MKS-7 as slave to the computer, I should be able to get anything I want for the price of the software and the interface. Even if it's $500 it's still a fraction of what it would cost for me to get a sequencer that would be able to handle that kind of application.

R. In your letter you said you have plans for using computers and music in schools?

L. I am studying a course at James Cook University up here. Besides this I have been involved with schools locally and the MKS-7 provides an excellent opportunity to demonstrate all kinds of different aspects of music to students.

The main thing I see is the advantage of having all the elements that are basically needed to have a good sound, the bass, the drums and the chordal section as well as melody in a little package that can easily go from classroom to classroom. Besides that, you've got all the sounds like twitters and sound effects from the keyboard to make it interesting.

R. What an excellent way for the kids to learn.

L. And also you've got the advantage that kids are becoming more and more computer literate and the idea of being taught music and the theory of musical notation by a computer has so many added benefits.

A simple thing like not being intimidated to ask silly questions can help the learning process, accelerating it. On top of that, as the software develops we could end up having musical games that are educational. It is obvious that this will really help the kids enjoy their education. On the other end of course, you've got the very fast learning, inquisitive student who isn't restricted by the whole class and can forge ahead according to his own progress within the program.

On top of this, there is the opportunity for the student to go beyond the knowledge and understanding of the teacher. So there is really no limit to the advantages of computers in teaching music.

Maybe we will hear more of Larry and his exploits soon. In the meantime, if you have any news about people or bands using computers in their music, please drop us a line.

MUSIC COMPETITION WINNER:

Mr Philip East
Glebe, NSW.

Congratulations to our winner, we all hope you enjoy using
this exiting new music making equipment.
ROLAND "MUSIC-DATA" MIDI INTERFACE

VALUE $510 r.r.p

With thanks to the Roland corporation, we have been able to offer this excellent example of
computer software and interface, for the benefit of our readers and also to gauge interest in the
subject.

For those of you who missed out, we will make it up to you, if not with other competition
opp0rtunities, or by the proposed extension of the workshop to answer questions and cover the use
and features of the myriad options in equipment available.

LOOK OUT FOR DETAILS

SIMPLE VIC 20 HARDWARE PROJECTS
CONNECTING A SECOND JOYSTICK

PART 1 in a series
by PHIL CAMPBELL

Don't be afraid... this article is for you. No need to be superb with a soldering iron or wonderful with wires, as these projects are indeed simple. For the cost of a few bits and pieces, the investment of a few dollars in a small soldering iron and half an hour of your time, you can produce some useful and entertaining peripherals for your VIC.

Have you ever wished your VIC had a second joystick port like the Commodore 64? No problem. Just follow the instructions and you'll have one in no time. There is even a sample program so that you can start playing against your friends straight away. In future articles, we will put your VIC on guard duty, get it to water the garden, and perform numerous other minor miracles.

Most of the projects which will appear in this series are connected either to the User port or the Game Controller Port. NEVER solder anything while it is connected to either port, even if the power is off, and NEVER plug in the User Port connector with the power switched on, as you will probably blow your VIC'S brains out. Even if you don't build anything, read through the project notes to find out a little more about how your VIC works... but better still, roll up your sleeves, grab your soldering iron and get stuck into it!

What you will need

1. One 9-pin (male) 'D' type connector identical to the existing CONTROL PORT on your VIC.
2. One 24 pin USER PORT connector with .156 inch spacing.
3. Suitable length of 6 core cable or ribbon cable.
4. Soldering iron and resin cored solder.

Construction

Carefully solder wires from the joystick socket to the user port connector as shown in the diagram below. You may like to mount both connectors on a small plastic box with the wiring inside. If so, make sure that you have left suitable clearance to plug the user port connector into your VIC. It is most important that you DO NOT plug the connector in upside down. You will find that there are narrow slots between the contacts in the connector...insert a thin strip of plastic in the slot indicated by the dotted line on the diagram to prevent this from happening.

Software

Access to the User Port is gained in exactly the same way as the control Port, with a DATA DIRECTION REGISTER determining whether each bit of the port is to act as an input or an output. If a bit in the DDR is set to 'O', the corresponding line of the port will be an input. The Data Direction Register is found at memory location 37138, and the Port Register at 37136. To use the port as a joystick input, the lines we connect to the switches must be set to zero in the DDR ... as we do not wish to use any of the other lines as outputs, we can simply POKE 37138,O to prepare the port. Now any of the eight lines can be used as joystick inputs, although we have selected bits 0,1,2, and 3.

BACK VIEW—USER PORT CONNECTOR
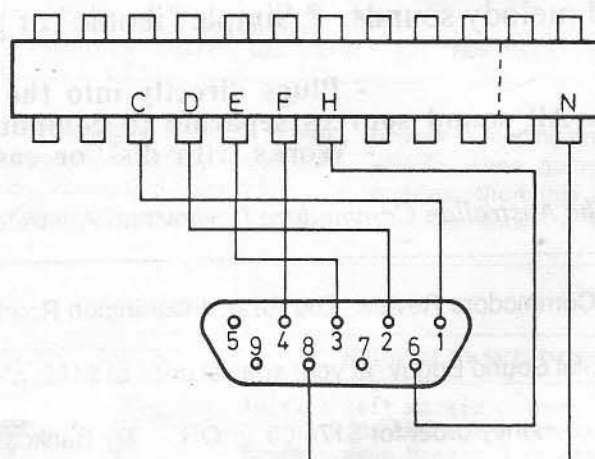
BACK VIEW
JOYSTICK
SOCKET

Switch closures are detected by PEEKing location 37136, and can be distinguished using the following logical expressions:

DOWN=-((PEEK(37136)AND1)=0)
UP=-((PEEK(37136)AND2)AND2)=0)
LEFT=-((PEEK(37136)AND4)=0)
RIGHT=-((PEEK(37136)AND8)=0)

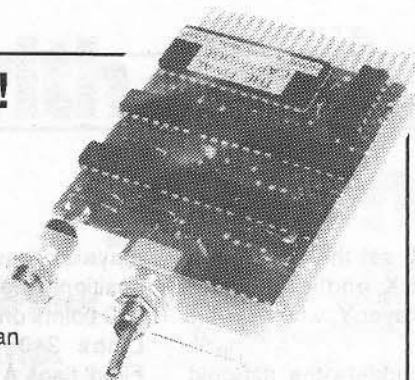The value '1' will be returned for each expression if the corresponding switch is closed. The other input lines could have been used just as easily, and can be detected by substituting the decimal value of the desired bit position into the equations above.

Laser Grid

Late in the twenty-fifth century, all our favourite sports have disappeared. Football and cricket, tennis and croquet have all been replaced by the LASER GRID, a battle field in which warriors duel to the death. It is a game of tactics and reflex, demanding total concentration as you stalk your opponent around the grid, avoiding meteorites as they hurtle through the grid suspended in space quadrant three. Points are awarded each time you hit your opponent or a meteorite, and the game terminates when either player has been hit four times. If you collide with the opposing grid warrior, points are rapidly sybtracted from both scores until you move apart, so take care! Enter the program, plug in two joysticks and find yourself a worthy opponent for a battle to the death on LASER GRID.

Program Notes

The structure of LASER GRID is quite simple; all the action occurs in a large loop between lines 90 and 580 - everything else is either decoration or 'house-keeping': constants are defined in lines 50 and 60, the characters required are produced by subroutine 590, and the laser grid is prepared by line 70. By now the standard bits and pieces should be fairly familiar to you, so let's go for a walk around the main loop.

Lines 100 and 110 set the laser beam origins, V for player X, on the left of the screen, and W for player Y, who appears on the right.
Lines 120 to 150 update the asteroid positions A1 and A2 until they reach the bottom of the screen. When they arrive they are reassigned random values near the top of the screen by lines 140 and 150 and repeat the process.
Lines 160 and 170 check for collisions between the asteroids and either player, adjust the scores, set the BAng or EXplosion flag variables, and jump to line 410 or 480 for the appropriate sound effect.
Lines 180, 190 and 200 read both joysticks, using variables U, D, L, R and F for the main joystick and U1,D1,L1, R1 and F1 for the auxiliary stick.
Lines 210 to 250 update the position of player X; for additional interest, this player is forced to move downwards in two line steps and upwards in three. Player Y, who is controlled by **lines 270 to 300**, does the reverse. If both

players move to the same screen position, **line 320** imposes a penalty of 200 points on each.
Lines 340 and 350 set the 'Laser Fired' flags A and B when the fire buttons are pressed which control the loops in **lines 360 and 430**. Variable V represents the beam fire by player X. Lines 380 to 400 check for collisions between the beam and asteroids or player Y and set the Explosion flag if required. **Lines 450 to 470** do the same for beam W when fired by player Y.

The laser beam routines were written as separate loops within the program to increase playing speed. As a result, all other action is stopped when a beam is fired, so if you are in the line of fire when your opponent presses his button there is no escape. On the other hand, if the beam movement is included in the main loop of the program escape is much too easy. You may be able to find a compromise ... as usual the program is just a springboard for your inventiveness.
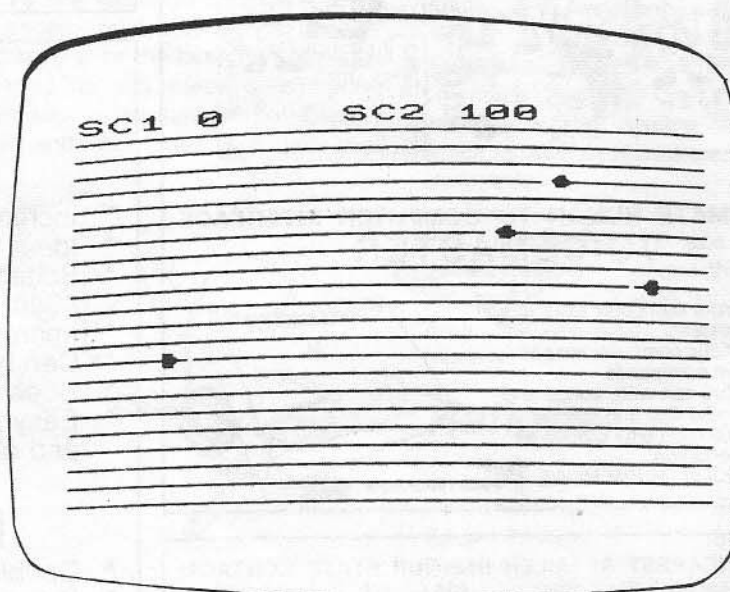
LASER GRID

```
10 REM****************LASER GRID**************
20 REM***********BY P. CAMPBELL************
30 REM********TWO JOYSTICKS REQUIRED********
40 OPEN2,2,2:PRINT"◸":POKE36879,25:POKE36878,10:
   GOSUB590
50 POKE37139,0:J1=37137:J2=37152:J3=37136:POKE37154,
   127:POKE37138,0:X=7724:Y=7745
```

```
60  N=36877:VL=36878:S1=36874:S2=36875:S3=36876
70  FORI=7702TO8185:POKEI,2:POKEI+30720,2:NEXT:POKEX,0
    :POKEY,1
80  A1=7702+INT(22*RND(1)):A2=7704+INT(20*RND(0))
90  P=PEEK(J1):Q=PEEK(J2):S=PEEK(J3)
100  IFA=0THENV=X
110  IFB=0THENW=Y
120  IFA1<8185THENA1=A1+23:POKEA1,3:POKEA1+30720,5
130  IFA2<8185THENA2=A2+21:POKEA2,3:POKEA2+30720,4
140  IFA1>=8185THENA1=7706+INT(10*RND(0))
150  IFA2>=8185THENA2=7701+INT(14*RND(1))
160  IFA1=YORA2=YTHENEX=1:SY=SY-150:GOTO410
170  IFA1=XORA2=XTHENBA=1:SX=SX-150:B=0:GOTO480
180  D=-((PAND4)=0):U=-((PAND8)=0):R=-((QAND128)=0):L=
     -((PAND16)=0)
190  F=-((PAND32)=0):D1=-((SAND1)=0):U1=-((SAND2)=0):
     L1=-((SAND4)=0):R1=-((SAND8)=0)
200  F1=-((SAND16)=0)
210  IFDTHENPOKEX,2:X=X-44:POKEX,0:POKEX+30720,2:POKES
     1,160:POKES1,0
220  IFRTHENPOKEX,2:X=X+1:POKEX,0:POKEX+30720,2:POKES
     1,170:POKES1,0
230  IFUTHENPOKEX,2:X=X+66:POKEX,0:POKEX+30720,2:POKES
     1,180:POKES1,0
240  IFLTHENPOKEX,2:X=X-1:POKEX,0:POKEX+30720,2:POKES
     1,185:POKES1,0
250  IFX<7680ORX>8185THENX=7680
260  REM***X=MAIN STICK,Y=AUXILLIARY***
270  IFU1THENPOKEY,2:Y=Y+44:POKEY,1:POKEY+30720,6:
     POKEN,245:POKEN,0
280  IFL1THENPOKEY,2:Y=Y-1:POKEY,1:POKEY+30720,6:
     POKEN,250:POKEN,0
290  IFD1THENPOKEY,2:Y=Y-66:POKEY,1:POKEY+30720,6
300  IFR1THENPOKEY,2:Y=Y+1:POKEY,1:POKEY+30720,6
310  IFY<7680ORY>8185THENY=7701
320  IFX=YTHENFORI=1TO20:POKES2,200-I:POKES3,200-I:
     NEXT:SX=SX-200:SY=SY-200
330  POKES2,0:POKES3,0
340  IFFTHENIFA=0THENA=1
350  IFF1THENIFB=0THENB=1
360  IFA=1THENFORV=X+1TOX+21:POKEV+30720,1:POKES3,220
     +V-X:POKES3,0
370  POKEV+30720,2
380  IFV=YTHENEX=1:POKEY,4:A=0:SX=SX+500:POKEY,1:
     YF=YF+1
390  IFV=A1THENPOKEA1,4:EX=1:A=0:SX=SX+200:POKEA1,2:
     A1=7702+INT(22*RND(0))
```

```
400  IFV=A2THENPOKEA2,4:EX=1:A=0:SX=SX+100:POKEA2,2:
     A2=7705+INT(22*RND(1))
410  IFEX=1THENPOKEN,200+DE:DE=DE+2:IFDE>10THENPOKEN,
     0:EX=0:DE=0
420  IFA=1THENNEXTV:A=0
430  IFB=1THENFORW=Y-1TOY-21STEP-1:POKEW+30720,1:
     POKES2,210+Y-W:POKES2,0
440  POKEW+30720,2
450  IFW=XTHENBA=1:POKEX,4:B=0:SY=SY+500:POKEX,0:XF
     =XF+1
460  IFW=A1THENPOKEA1,4:BA=1:B=0:SY=SY+200:POKEA1,2:
     A1=7702+INT(22*RND(0))
470  IFW=A2THENPOKEA2,4:BA=1:B=0:SY=SY+100:POKEA2,2
     :A2=7705+INT(22*RND(1))
480  IFBA=1THENPOKEN,220+DE:DE=DE+2:IFDE>10THENPOKEN,
     0:BA=0:DE=0
490  IFB=1THENNEXTW:B=0
500  PRINT"    SC1"SX"    SC2"SY
510  POKEA1,2:POKEA2,2:IFA1=XTHENPOKEA1,0
520  IFA2=XTHENPOKEA2,0
530  IFA1=YTHENPOKEA1,1
540  IFXF=4ORYF=4THENPRINT"           GAME OVER"
550  IFXF=4ORYF=4THENPRINT" HIT ANY KEY TO PLAY   "
560  IFXF=4ORYF=4THENFORI=245TO129STEP-1:POKES2,I:POKES
     1,I:NEXT:PRINT""
570  GETA$:IFA$<>""THENXF=XS=YF=YS=0:RUN
580  GOTO90
590  READGR:IFGR=999THEN610
600  POKE7168+GN,GR:GN=GN+1:GOTO590
610  FORGN=7168+8*32TO7168+9*32:POKEGN,0:NEXT
620  POKE36869,255:RETURN
630  DATA192,192,224,252,224,192,192,0,3,3,7,63,7,3,3,
     0,0,0,0,255,0,0,0,0,6,14,3,31,15
640  DATA14,0,0,999

READY.
```
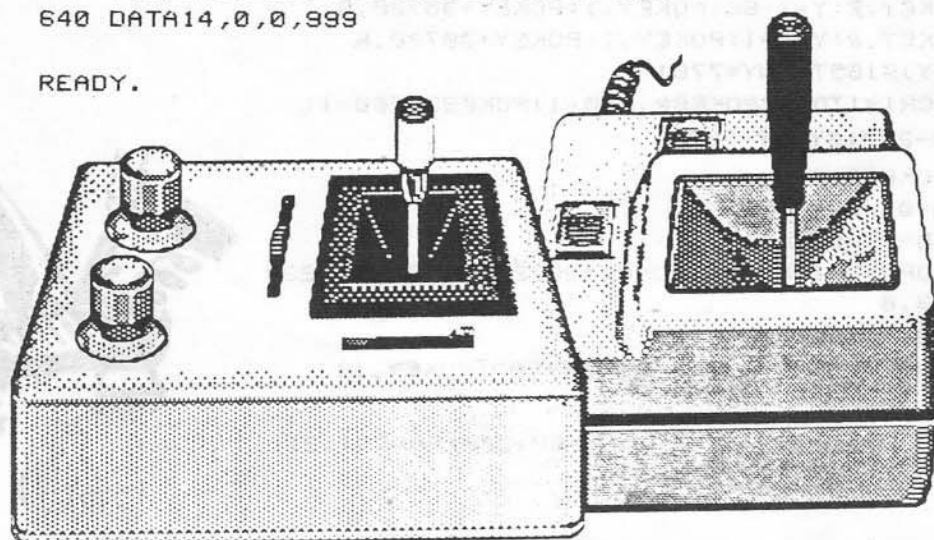
SATURDAY COMPUTER SERVICES
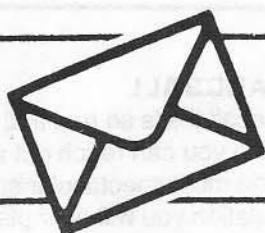
MAIL ORDER LIST

This is our new up to date catalogue with all the latest releases.

For reasons of space we can't include *everything,* so if you don't see what you want on this list, please telephone us on (02) 398 5699 and enquire about price and availability.

Games

ADVENTURE QUEST
Explore middle earth and reach the black tower. 200 locations. Text. $29.95 (D or C)

CONAN THE BARBARIAN
Your goal is to find and destroy the villanous Volta. 7 levels. $39.95 (D)

DALLAS QUEST
Hi-Res adventure. JR Ewing takes you in search of 2 million dollars. $39.95 (D)

DRAGONRIDERS OF PERN
Alliance forming and battle constitute this fast paced game. $29.95 (D)

DUNGEON ADVENTURE
200 locations and 100 puzzles will keep you off the streets. Text. $29.95 (D or C)

GHOSTBUSTERS
You've seen the movie, now you too can get slimed. Back off man! $34.95 (D) $29.95 (C)

Perry Mason: The Case of the Mandarin Murder

Victor Kapp is dead - murdered. Laura is in jail, charged with his death. And facing trial very, very soon.

You'll have to work fast - and smart. Dig into people's lives.

The first interactive mystery to use the world-famous criminal lawyer created by Erle Stanley Gardner. It also represents a major breakthrough in interactive fiction: the cooperation of the characters and jury changes as a direct result of your interactions with them.

In addition, you can do virtually everything a court room lawyer can do.

Price: $49.95 (D)
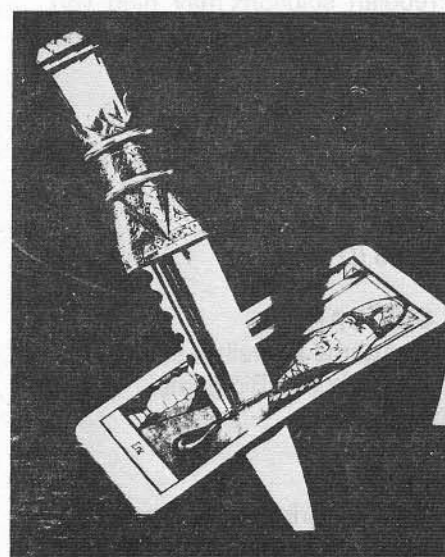
Nine Princes in Amber

They tried to kill you - and when that failed, they stuck you in a private hospital with enough drugs to keep you out cold for the rest of your life.

Well, almost enough drugs.

You are a prince of Amber, fighting for the throne against your eight brothers and four sisters - all of them treacherous. Yet you must gain the support of some of them if you are to succeed. And that will be as complex and tricky a game of politics as you ever hope to play. Especially without your memory.

Price: $49.95 (D)

I have carefully looked over the entire range of software and hardware being offered in this mail order list, and believe that it is of good quality and excellent value for money.

Andrew Farrell, Editor

SATURDAY COMPUTER SERVICES
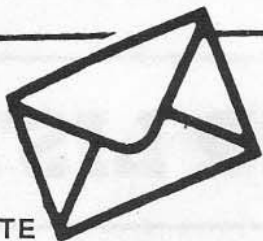
INSTITUTE
Freudian solutions may help you escape or you die a 1000 deaths.
$24.95 (D)

JUMPMAN
See the Aust. Commodore Review for low down and up top of this game.
$29.95 (D & C)

OIL BARONS
Board game as well as software. Dallas at home. Big game.
$69.95 (D)

PITSTOP
Classic car driving action game. Strategy and nerve are necessary.
$19.95 (C)

POLE POSITION
Experience the thrills of Formula 1 as you race against the clock.
$29.95 (C) $39.95 (D)

POTTY PIGEON
Make your home to the tune of great music and superb graphics.
$19.95 (C) $24.95 (D)

RETURN TO EDEN
First Level 9 game with graphics. 250 locations, many puzzles.
$29.95 (D or C)

SNOWBALL
Huge adventure with over 7000 locations awaiting you! Text.
$29.95 (D or C)

SPACE ACE 2101
Strategic arcade real time game. Trade before you fight.
$19.95 (C) $24.95 (D)

SPY HUNTER
Hunt spies till the cows come home and the chickens roost!
$29.95 (C)

SPY VS SPY
Classic from Mad now comes home. Ingenuity + steady hand required.
$29.95 (C) $34.95 (D)

STRIP POKER
R rated computer game - sizzling graphics! Have to see to believe.
$29.95 (C) $39.95 (D)

SUICIDE EXPRESS
The future of the human race is in your hands once again. Arcade.
$19.95 (C) $24.95 (D)

THEATRE EUROPE
Combination of strategy and arcade action in this popular new game.
$29.95 (D or C)

ZIGGURAT
The most bewildering maze ever created. Is there a way out?
$24.95 (D)

SUPERMAN THE GAME
Superman and Darksied are pitted against one another in the ultimate battle of good against evil. 'Super' graphics and split screen action.
$29.95 (C) $34.95 (D)

BRUCE LEE
Meet the master of the arts in the most artful form of self defence. His body is his weapon, and now he's ready to join forces with you.
$29.95 (C) $39.95 (D)

THE GOONIES
Instead of playing the role of one Goonie, you must know and control the mischievous role of all The Goonies. See ACR Vol 3 No 1 for full review.
$29.95 (C) $39.95 (D)

ZORRO
Multiple levels, traps, escape routes and tunnels are only some of the obstacles that form part of your quest. See ACR Vol 3 No 1 for full review.
$29.95 (C) 39.95 (D)

HARDBALL
Baseball that's so real and true to life, it's like you can reach out and touch it. The most spectacular sports simulation you will ever play. See this issue for full review.
$29.95 (C) $34.95 (D)

LAW OF THE WEST
If you've ever wanted to strap on a six-shooter, pin a tin star to your chest and match the exploits of Bat Matterson or Wyatt Earp, then this is your chance. See Vol 3 No 1 for full review.
$29.95 (C) $34.95 (D)

KENNEDY APPROACH
You are in charge! It's your job to get all the aircraft and passengers on the ground, or on the way safely. The first speaking simulation that allows you to communicate between pilot and control tower. See Vol 2 No 8 for full review.
$39.95 (D)

THE ISLAND CAPER
This is the sequel to the original hit computer game "Mad Magazines official Spy vs Spy". If you've played Spy vs Spy, then don't miss this exciting real time episode.
$29.95 (C) $34.95 (D)
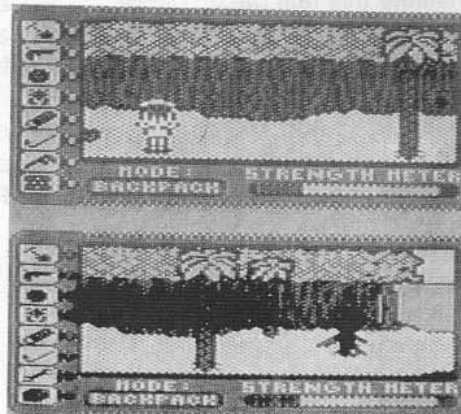
SATURDAY COMPUTER SERVICES

Educational

This is only a selection of the software available for mail order.

Please see the next issue of *The Australian Commodore Review* for more.

As advertisements must be prepared well ahead of publication time, prices are subject to change without notice.
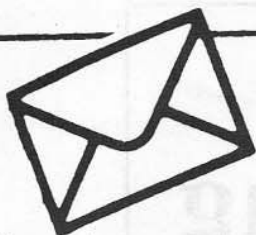
METEOR MULTIPLICATION
From DLM.
By using the keyboard, the player must aim his spaceship at the closest meteor, work out his answer, type it in, then shoot and move on to the next closest meteor until the screen is empty. It sounds simple, but it really is excellent. It makes education fun and exciting.
$39.95

Other educational games available from DLM are:

Alien Addition
Alligator Mix
Demolition Division
Dragon Mix
Minus Mission

$39.95 Each

Trends in Telecomputing

by Andrew Farrell

This month we take a look at some real life examples of the sort of people and the types of conversation you can expect to encounter in the world of telecomputing.

The following captured moment of history was taken from the Illawarra Bulletin Board System. They have several message areas, the most entertaining being inhabited by a collection of avid adventure players. Many seem to be totally engrossed with programs such as *Elite*, whilst others are still well and truly living the madness of *Hitchhiker's Guide to the Galaxy*.

A few explanations are in order for those of you not familiar with the sort of gibberish spoken by these creatures. In the first few messages of interest reference is made to Dire Straits (a small pop group who are continuing to enjoy a reasonable amount of success in the known universe..). This reference may not at first be obvious, as the terminology used is not familiar to most. A little rereading may be in order: however, no doubt you will catch on after the third or fourth time.

Interlude of sorts with Illawarra deep space center

```
---------------------------------------------
Message #    :92
From         :CAPTAIN CURSOR
To           :FORD
Subject      :MISSIVE
Posted at-06.41.26 pm Jan 21/86
Private      :N

Read CR=NO, Y=YES, E=END):Y
You asked for it and here it is!
My next missive.
```

The latest gossip from the Galaxy is that Disaster Area are going to split! After a series of problems in the band it has been decided that the original members will be replaced with androids. Fans are outraged that these androids will be programmed with musical knowledge and so the band will lose its original 'character'.

Also just in is news that the Bistromathic drive system has been made obsolete. The new drive system, the Exo-Galactic Drive System works on the fact that the space-time continuum is spherical.
See next message

```
---------------------------------------------
Message #    :93
From         :CAPTAIN CURSOR
TO           :FORD
Subject      :MISSIVE  PT.2
Posted at - 06.49.44 pm Jan 21/
Private?     :N

Read (CR=NO, Y=YES, E=END):Y
```

Just as a rocket can leave the surface of the earth and then arrive back at a different spot after travelling through space, the Exo-Galactic Drive System leaves the space/time sphere and arrives at its destination. However, the trip takes no time because the craft is actually outside the space-time sphere.

Captain Cursor

END OF SCAN

[EMAIL - >OFF WORLDERS!]
<C,E,M,R,S,?>

```
---------------------------------------------
```

An interesting concept I'm sure you'll agree. Feasible? Anything can be if you have a good enough imagination.

That's what makes this Bulletin Board system one of the better ones in the area, and for that matter in Australia. Our visit continues...

```
---------------------------------------------
Message #    :76
From         :ICEMAN
To           :ALL
Subject      :TICKETS1
Posted at-12.34.40 pm  Jan 15/86
Private      :N
```

I HAVE TWO TICKETS TO THE FINAL 'DISASTER AREA' CONCERT, AND I HAVE TO SELL THEM AS I ATTENDED THE FIRST CONCERT, AND I STILL SUFFER FROM LOSS OF HEARING...... THE SEATS ARE SITUATED 3.6 MILLION LIGHT YEARS AWAY IN A CONCRETE BUNKER, WITH WALLS 12 FEET THICK, ON A SMALL UNCHARTED PLANET. YOU WON'T GET FRONT ROW SEATS LIKE THESE JUST ANYWHERE. THE TICKETS ARE 200 ALTARIAN DOLLARS EACH... YOU PROVIDE THE TRANSPORT. INTERESTED PARTIES CONTACT.....ICEMAN

End of message

```
Enter msg# 44
(CR= 77, 0= exit):
```
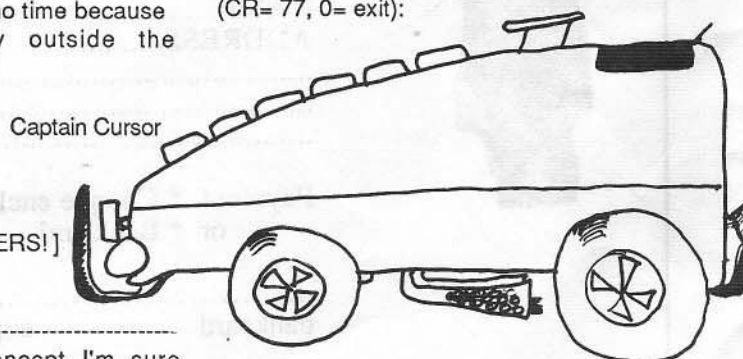
COMMUNICATIONS

Message # :77
From :FORD
To :ICEMAN
Subject :SEATS
Posted at-12.58.12 pm Jan 15/86
Private :N

HI THERE ICEMAN, I FOR ONE AM VERY INTERESTED IN ATTENDING THE NEXT CONCERT AS I MISSED THE LAST TWO, DUE TO BEING STUCK ON THIS LUMP OF MUD CALLED EARTH.
I WILL HAVE PROBLEMS THOUGH WITH THE TRANSPORTATION, ANY SUGGESTIONS HOW A STRAIGHT FROOD LIKE MYSELF MIGHT ACQUIRE SOME FORM OF TRANSPORTATION??

End of message

Message # :79
From :CAPTAIN CURSOR
To :FORD
Subject :TRANSPORT
Posted at-08.32.49 pm Jan 15/86
Private :N

A Boopy kind of frood like yourself should have no problems getting transportation. Just whip out the old Sub-Etha Sens a Matic and check for an appropriate vehicle.
Failing that contact Han-Solo.
He has been out of work since the last Star-Wars film and will be eager to transport you in his ship.
Please note that Galactic Prudential has a special Disaster Area Concert-goers special. In the event of your
death at the concert you will receive free of charge, a funeral service at the Sun-View solar crematorium.
See next message

Enter msg# 44 - 93
(CR= 80, 0= exit):

Message # :80
From :CAPTAIN CURSOR
To :FORD

Subject :INSURANCE
Posted at-08.38.32 pm Jan 15/86
Private? :N

In the event of your not being killed by sustaining a severe disability you will receive a telegram viz - 'You shouldn't have gone you stupid bugger'.

FILL OUT THIS POLICY FORM NOW.

I........... Hereby, in the event of my death, give GALACTIC PRUDENTIAL sole rights to all my belongs and wealth.
I realise that if, by some miracle, I survive the concert I may be a target for Galactic Prudential's hit man.
         Sign Here...........
Send without delay to
         Galactic Prudential
The address is in your phone book!

End of message

Inspirational stuff. No doubt the potential exists for many more message systems to be as entertaining, so long as the users can manage to drag themselves away from trivial discussions about nondescript matters and step up to a higher level of conversation. It is often disappointing to log onto a system only to discover that despite the fact there have been some two or three hundred new messages, most are private and those that aren't are a waste of time. Thank goodness for the mail check option..
  I have personally resorted to using the SCAN command on COMMBOARD systems in order to try and pick and choose between which messages I spend time reading. As you will note on the above transcript, the prompt to read another message or select a different one is given after the header. Again, you still have to rely on people using useful topics in the message to give some indication as to what they are all about. Try and keep this in mind next time you're on line.. Happy Telecomputing.

Faster than a Speeding Bullet

by Gareth Powell

THE BIGGEST REVOLUTION in computer communications is now upon us. It is as a big a revolution in its own way as the development of the Commodore personal computer. You do not believe me? Read on.

When computers talk to each other over the public telephone system they do it at so many bits of information a second working through black boxes called modems. The current speed standard is 300 (about as fast as you can read) which is quick compared with telex which has arthritis and strolls along at somewhere around 80.

Most of us heavily into telecommunications gee whizzery are using 1,200 bits per second modems - essential for Viatel - and some of us, the favoured few, are using 2,400 modems and letting everyone know about it.

In my office I have two 2,400 bit per second modems which will be connected up Real Soon Now and, so the manufacturers say, will allow me to bring the good news from Aix to Ghent, or at least Hongkong to Sydney, with no problem whatsoever. 2,400 is fast. Really fast. Eight times as fast as 300 bits per second. These modems are made by Netcomm.

On leased lines, of course, speeds soar to the stratosphere but even on the standard telephone network 4,800 bits per second can be achieved, normally by the telephone companies.

Around the middle of last year I started hearing strange rumours about an American whose work was with satellites. The story was he had a need for modems to connect together his company's computers. Being a practical chap he went out and made some.

He knew not of the struggles through 300 bits per second to 1,200 bits per second, of the ingenuity and perseverance required to get to 2,400

and then ever onwards up the Everest slopes to 4,800.

No one had told him. So it did not concern him.

He set the speed of his modems at an arbitary 10,000 bits per second and went ahead and constructed them. The fact it was technically impossible did not occur to the man. So he made them. And they worked.

It transpires this was not a fairy story. It is true.

The modem has been released in the United States as The Trailblazer, a fairly well deserved title, and is now being distributed in Australia by NetComm of Ryde, a company who know more than a thing or two about modems and admit to being amazed by the ingenuity of the design.

This modem uses the Motorola 68000 - the same 32 bit chip that powers the Macintosh - and a Texas Instruments signal processor chip called TMS 320 which is working at 4 million instructions per second. These two chips, working in tandem, allow this amazingly high rate of information interchange over the public network where the line can often get noisy in the technical sense.

Noise can best be defined as any type of signal which is generated or is present when you don't want it. A bit like human beings, really.

The way the Trailblazer modem achieves this neat trick is by splitting up the telephone bandwidth.

Most modems slice it in half so you have, in effect, a two lane highway. The Traiblazer create 512 different ranges within the bandwidth. These are constantly monitored to allow the cleanest bandwidth (that is the one with the least noise) to be selected for any given package of information to be hurled down faster than a speeding bullet.

This modem has built in error detection algorithms (fancy pieces of programming which spot something is wrong and make

the modem repeat the message until it gets it right) but its great strength and virtue is it should rarely need to use them.

As the modem is of American manufacture there is a small problem at slower speeds.

The modem will detect and accept signals sent by its slower brethren at 300 bits per second or 1,200 bits per second, but only to the Bell standard which is used in the United States, Canada, Taiwan and, on occasion, in Hong Kong. But not in Australia. Here we follow the CCITT convention.

This modem is ideal if you are hurling large quantities of data between two computers both of which are equipped with a Trailblazer. It will be an even more astounding breakthrough when NetComm whip out the current low speed circuitry and stick in their own automatic answering and signalling gear which covers all the CCITT standards.

If you have trouble working out in your head how fast 10,000 bits per second is - I certainly do - then it is the equivalent of, say 1,000 characters a second and the whole of this article would be transmitted in less than seven seconds. Note that the speed of 10,000 baud is nominal.

That's the good news.

Now the not so good news. Each modem will cost you the thick end of $6,000, which is as cheap as chips if you transmit information overseas on a regular basis.

I have used the Trailblazer running at the quite frightening speed of 15,146 baud, at which rate no terminal software currently available will handle it. You have to have a special program written. But this is not the least of the wonders. Texas Instruments have a chip which is capable of handling a throughout of five times this speed and, yes, you will be able to transmit and receive at something between 50 and 70 thousand baud before the end of this year or, at the latest, easrly next. Which means a rate of something around one thousand words a second.

Which means the biggest revolution in the history of computer communications is upon us.

What is Teledata?

Welcome to Teledata Visitor Mode!

Teledata is Australia's Premier Public Access Computer Communications Network. It is based on our own computer facilities plus the use of Telecom Australia's new and economic Austpac data transmission services. Members can access our system through the use of a modem from any telephone in Australia (or around the world) such as in your office, home or motel room.

Membership of Teledata enables you, via your own personal computer, word processor or simple terminal to communicate with the computers of thousands of other Teledata members throughout Australia. These other members can be interstate branch officers, dealer networks, suppliers or customers.

Subscriber Rates & Fees

When you logoff from the System, you will be informed of the charges incurred during that session, broken down into various categories.
(i) Weekdays:
    0000 - 0800 $5.00/hour
    0800 - 1800 $13.00/hour
    1800 - 2400 $8.00/hour
(ii) Weekends/National Public Holidays
    0000 - 1800 $5.00/hour
    1800 - 2400 $8.00/hour

Note: National Public Holidays denotes a Public Holiday in ALL states! A connection fee of 33 cents (the price of a stamp!) is charged each time a member logs on. The member is also charged a minimum time charge of 40 cents each time the member uses the system. This means that if you use LESS than 40 cents of time on the system you will be charged a minimum of 40 cents. However, if you used 50 cents worth of time, you would ONLY be charged 50 cents.

Disk Storage Charges

Each member is charged a quarter of a cent (0.0025) per kilobyte per day, for items stored in their private DIRECTORY or storage area.

Account Maintenance Fee

People who were members of the system prior to 30th June, 1985 and Home/Student members are charged an

Account Maintenance fee of $2.00 per month to cover the costs of maintaining their data on the system.

Commercial members are charged a fee of $5.00 per month but are not charged a surcharge for access to purely commercial applications on the system.

External Charges

These are the charges imposed by Telecom and O.T.C. for the use of their facilities plus a small Teledata handling charge for Telexes, and are payable in ADDITION to Teledata hourly rates.

Austpac Charges (Telecom):
    0800 - 1800 $5.95/hour
    1800 - 0800 $4.95/hour
    All Weekends $4.95/hour

Telex Charges:
National (Telecom)
    0800 - 1800 $0.45 per minute
    1800 - 0800 $0.25 per minute
International (O.T.C.)
    $2.00 per minute

The Telex network transmits characters at a rate of approximately 5 characters per second.

The History of Teledata

The Teledata Network was originally incorporated in October 1981, and whilst trading as "The Australian Beginning" (T.A.B.), facilities first became available to members in March 1982.

Initially the system was developed and operated on a Data General S140 Computing System owned by GCS - Teledata. Expansion of the company dictated a move to new premises in Hawthorn East, and in December 1982, T.A.B. installed its own computing system and communication facilities.

In April 1985, ownership of the Company changed, and after a period of consolidation and management restructuring, the service was again initiated.

A Melbourne investment firm, Holdings & Equities, acquired the company, and Mr Peter Wallinga had become Chairman. Mr Wallinga, who had also assumed responsibility for all marketing activities, has acquired a majority shareholding which includes a small parcel of shares held by the original founder of The Australian Beginning.

On July 1st 1985, after a period of negotiations and re-development the service was re-launched as TELEDATA, under "Teledata Pty. Ltd.", and is currently the only in Australia offering services, similar to that of its countersparts in the United States; "Compuserve", "The Source" and "Delphi".

The heart of the Teledata Network is a Data General MV8000 supermint computing system, with 4 megabytes of Main Memory, and 400 megabytes of disk storage. The current membership is supported by 35 communications lines, and this will be expanded to cater for the ever increasing membership base.

Teldata Main Menu

1. What's New?
2. International Gateway Services
3. Personal Computing and Leisure
4. Entertainment & News Services
5. Telex & Communications Services
6. The Shopping Complex
7. Subscriber Comments & Feedback
8. Membership Infomation Guide
9. Network Information Guide
10. The Entertainment Connection
11. Logging Off

Adventurers' Corner

Dear Mr Rigby,

I need help with Zork II for I have had it for two months now and I still haven't solved it.

There are a few questions I need to ask you.

Q16. 1) What do the etchings in the circular room mean?

**Q17.** 2) How do I get through the baseball maze and how can I use the diamond window to my advantage?

Q18. 3) How do I get the wand off the wizard?

Thanking you in anticipation
Troy Allen

Zork II

Zork II is also called the Wizard of Frobozz and is more challenging than Zork I. It may have been written by terrorists as the adventurer needs to know how to use explosives, open locked doors without a key, rob banks and use poisons. As normal there are many puzzles, including a riddle to solve, an unmappable maze and magic to learn. Many of the inhabitants and objects are deadly and the Wizard will make things difficult for you. As in all of the Zork series there are points for solving puzzles and achieving various tasks within a time limit. Zork II starts on the endless stairs from the barrow in Zork I and finishes with you having the powers of the Wizard of Frobozz. However until you manage to overcome the Wizard, things will be difficult as he will attempt to foil your actions by casting spells (normally beginning with "F" such as feeble and fumble). As with all Infocom games, the puzzles are logical, the descriptions are superb and there is a humour not found in other games.

Keep good maps but remember that the
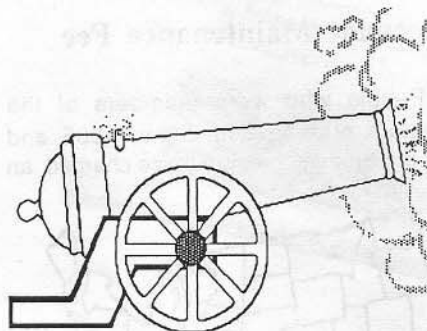
direction back may not be the exact opposite of that which lead to the room. If you have a problem in Zork II, see if it is in the following list. If it is then substitute the numbers for words in the table, but remember that not all problems are listed and even those which are listed may only contain a clue rather than being solved in full. Good luck and good adventuring.

Treasures and Useful Objects

1. A pearl necklace
   37 16 187 169
2. A gold key
   26 16 186
3. A statue
   37 35 188
4. A red sphere
   37 85 189 169
5. A violin
   37 16 65 46
6. A portrait
   37 16 190
7. Moby Ruby
   37 16 191 169
8. Zorkmid Bills
   37 16 190
9. A blue sphere
   37 16 192 169
10. Candy
    37 16 181
11. A black sphere

   4 193 29
12. A gaudy crown
    37 85 46
13. A clear sphere
    37 16 194
14. Flathead stamp
    37 85 93
15. A gold coin
    26 85 195

Problems?

1. Locked doors a problem
   8 16 80 38 55 16 90 67 16 139 72
   45 29 62 4 130 29 107 23 85 146
2. Is the dragon a problem
   19 29 76 50 72 16 115 169
3. Can't catch a unicorn
   120 134 11 153 100 35 41 14
4. Still can't catch it
   142 16 150 18 16 94
5. Can't get passed the Guarded Room
   57 16 110 157 16 124 2 67 16 163
   80
6. Cerberus killing you
   21 16 166 117 26 87
7. Where is it
   43 16 128
8. Still can't find it
   40 16 136's 171 2 141 16 128 47 40
   16 132 72 96 29
9. What is the clay brick
   29 38 122 162
10. Can't solve the riddle
    112 63 85 52 63
11. What is the black string
    29 38 85 155 72 67 23 122 162
12. Trouble with the Carousel
    16 138 55 16 104 169 78 29
13. What do the spheres do
    69 55 72 16 29 74 174 114 16 148
    74 2 83 26
14. What is the Grue Repellent
    53 16 144
15. You can't wake the princess
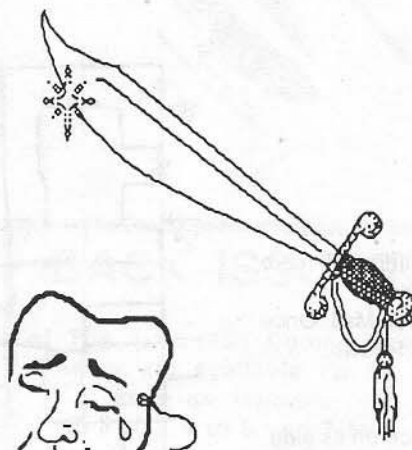   98 180
16. What is the Odd Angled Room

29 38 85 179 102 48 103 183 108 2 159

17. Trouble robbing a bank
14 38 66 151

18. What does the curtain of light do
29 71 72 105 152

19. How do I get into the vault
48 12 79 16 25 169

20. How do I get out of the vault
17

21. What is the basket and canvas
85 99 154 111

22. Can't read some books
14 38 151

23. Trouble with a rusty box
21 162 55 16 118 156 2 67 85 155

24. Trouble with the circular room
29 38 85 52 40 55 72 16 106 2 59 140 55 72 29

25. Can't get back to the circular room
16 51 11 56 6 44 16 140 176s 55 1 109 75 42 143

26. Can't read the writing on the cakes
53 54 114 16 158 79 16 181 169

27. Trouble with the pool
3 16 28 64 72 176 16 140

28. Trapped in a cage
7 16 95 72 5 29

29. Are buttons killing you
40 16 95 72 41 29

30. What do the buttons do
78 16 86

31. The square button
9 49 20 26 16 86

32. The round button
9 13 20 26 16 86

33. The triangular button
22 16 86 2 15 10 65 46 55 16 99 169 182 113 41 14 36 13 20

34. How do I get the treasures in the Wizards trophy case
40 77 171 2 67 85 101 24

35. How do I use the red sphere
21 29 55 16 119 121

36. The blue sphere
21 29 55 16 116 121

37. The clear sphere
21 29 55 16 125 121

38. The black sphere
21 29 55 16 149

39. Trouble in the aquarium
27 84 2 3 145 177

40. What do I do with all the treasures
57 54 72 16 132

41. Problems with the Wizard
30 16 132 72 31 77 171

42. How do I cast spells
53 16 129 93 81 33 16 171 2 123 16 24

43. Some of the descriptions are nonsense
29 39 85 126 24 26 29

44. What spells are used
127 184 135 164 137 172 131 178 133 101 126 147 185 161 173 165 170 175 160

45. Can't get passed the landing
4 32 60 16 68 171

46. I have all the points but I have not finished the game
34 16 92 38 91 16 58 38 89

47. Trouble with the grue
67 88 168

48. Can't get passed the IceRoom
40 16 94 37 61

49. Why does the sword glow
34 4 70 74 169 82 18 73

I would like to thank the Zork User's Group for their information on Zork II.
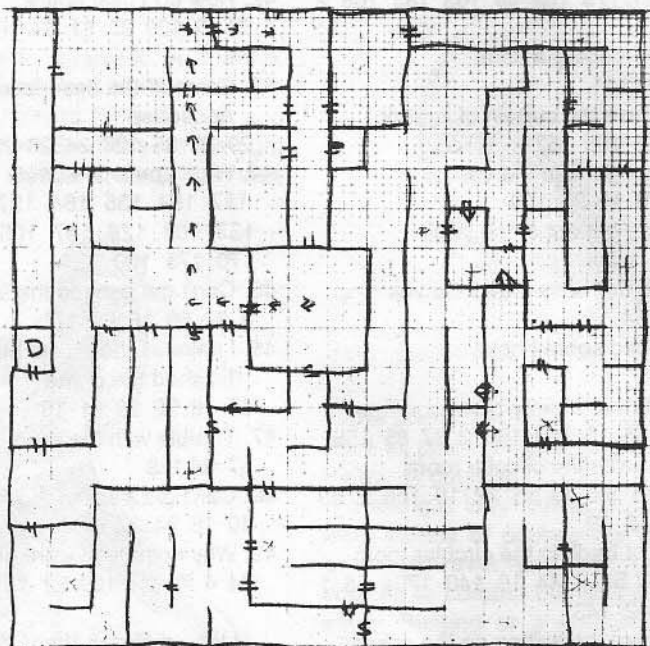

Word Table for Zork II

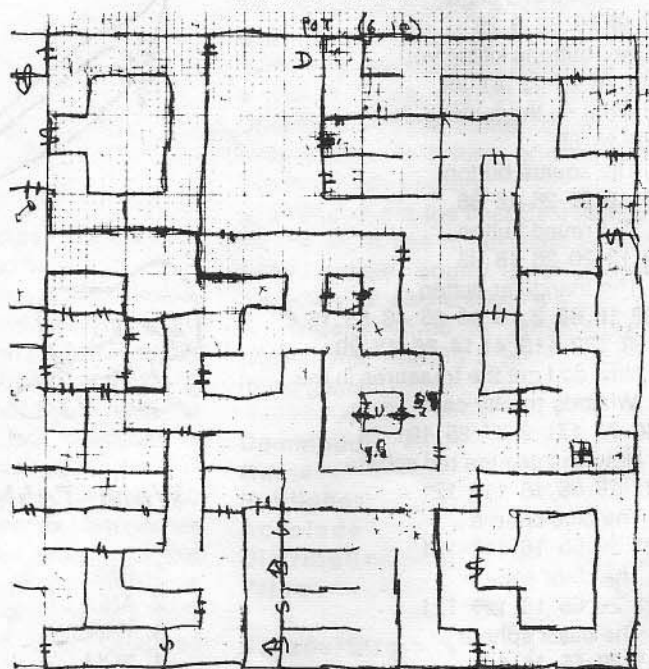|			
1 ONE	12 SOUTH	23 WITH	80 KEY
2 AND	13 LOW	24 SPELL	81 .
3 THROW	14 THAT	25 SMALL	82 AWAY
4 YOU	15 RELEASES	26 ON	83 SO
5 LIFT	16 THE	27 STAND	84 BACK
6 UP	17 NORTH	28 RED	85 A
7 TELL	18 FROM	29 IT	86 CAROUSEL
8 IF	19 ATTACK	30 ASK	87 HIM
9 SETS	20 SPEED	31 TAKE	88 GRUE
10 AN	21 PUT	32 MUST	89 VISIBLE
11 OF	22 STOPS	33 POINT	90 LOCK
		34 WHEN	91 DARK
		35 CAN	92 CRYPT
		36 AT	93 BOOK
		37 IN	94 DRAGON
		38 IS	95 ROBOT
		39 HAS	96 MOVE
		40 GET	97 DEFLATED
		41 DO	98 KISS
		42 LEAVING	99 LOW
		43 BEHIND	100 BLOOD
		44 HOWEVER	101 FILCH
		45 CATCH	102 DIAMOND
		46 BOX	103 SOUTH-EAST
		47 OR	104 MACHINE
		48 WALK	105 FOUR
		49 HIGH	106 BUCKET
		50 RUN	107 OUT
		51 REVERSE	108 NORTH-WEST
		52 WELL	109 HUNDRED
		53 READ	110 LIZARD
		54 THEM	111 BALLOON
		55 IN	112 ANSWER
		56 GOING	113 CAUTION
		57 GIVE	114 THROUGH
		58 DOOR	115 ICE
		59 POUR	116 SAPPHIRE
		60 POUR	117 COLLAR
		61 THERE	118 OBLONG
		62 WHEN	119 RUBY
		63 ''	120 ONLY
		64 CAKE	121 STAND
		65 IRON	122 PLASTIC
		66 PERFECTLY	123 INCANT
		67 USE	124 CANDY
		68 WIZARD'S	125 DIAMOND
		69 LOOKING	126 FANTASIZE
		70 ARE	127 FALL
		71 LEADS	128 MENHIR
		72 TO	129 WHITE
		73 SOMETHING	130 PUSH
		74 ONE	131 FEAR
		75 MOVES	132 DEMON
		76 THEN	133 FUMBLE
		77 HIS	134 THOSE
		78 CONTROL	135 FREEZE
		79 FROM	136 WIZARD

Standing Stones
Level One

137 FIERCE
138 BUTTONS
139 PLACEMAT
140 WATER
141 FLOAT
142 SAVE
143 STRANDED
144 LABEL
145 SOMETHING
146 LETTER-OPENER
147 FIREPROOF
148 BLUE
149 PENTACLE
150 PRINCESS
151 UNDERSTANDABLE
152 PLACES
153 ROYAL
154 HOT=AIR
155 FUSE
156 HOLE
157 GUARD
158 FLASK
159 SOUTH-WEST
160 FROBOZZLE
161 FUDGE
162 EXPLOSIVE
163 GOLD
164 FENCE
165 FREE

166 DOG
167 DANGEROUS
168 REPELLENT
169 ROOM
170 FROBIZZ
171 WAND
172 FERMENT
173 FLUORESCE
174 VIEWS
175 FROBNOID
176 EVAPORATE
177 HEAVY
178 FEEBLE
179 BASEBALL
180 HER
181 POOL
182 ,
183 NORTH-EAST
184 FLOAT
185 FRY
186 UNICORN
187 PEARL
188 CHEST
189 DINGY
190 BANK
191 LAVA
192 DREARY
193 CREATE
194 AQUARIUM
195 LEDGE

Standing Stones
Level Two

Hitch Hikers Guide to the Galaxy

Dear Sir,

As the babel fish problem is the most difficult I have encountered, I think we ought to help Andrew Hansen.

He will have to go back to Earth and get the Junk Mail. Once he is back in the Vogon Ship he must proceed as follows:

1) Hang the gown by the loop on the Hook
2) Place the towel on the drain
3) Place the satchel in front of the panel. It will face on its side.
4) Place the junk mail on the satchel.
5) Press the dispenser button and stand back and watch the action.

Also Andrew, you will still have problems getting the vector plotter. Try enjoying the Vogon Captain's poetry.

Mark Hennesy

Bastow Manor

Dear Sir,

My name is Rickie Pratt and I am twelve years old and I've recently been endeavouring to play an Adventure, *The Secrets of Bastow Manor* and have managed to get inside the house and have come upon a closet which adjoins with the kitchen. In the closet is a bucket, a mop and a crate. When you move the crate you find a brass key, but every time you move it, old man Bastow (the supposed owner of the house) comes, knocks you out and takes away the key. Is there any way to avoid this?

Yours faithfully
Rickie Pratt

Displaying a KoalaPainter Picture without running KoalaPainter

The following is a BASIC program with a machine language subroutine which will load and display pictures from a disk that have been created with the KoalaPainter software. Make sure that you are very careful when you type it in, since a single error in any of the DATA statements can cause your computer to crash.

```
1   REM DISPLAY A KOALAPAINTER SCREEN
10  IF A=1 GOTO 90
20  FORA=49154TO49317:READI:POKEA, I:NEXT
30  INPUT "WHICH PICTURE";A$
40  A$=A$+"        "
50  F$=CHR$(129)+LEFT$(A$,14)
60  FC=PEEK(53281):CC=PEEK(646)
70  A=1:PRINT"LOADING...";:LOAD F$,8,1
80  END
90  SYS 49154
100 WAIT653,1:WAIT653,1,1
110 POKE53265,PEEK(53265)AND223
120 POKE53272,(PEEK(53272)AND240)OR4
130 PRINT" {CLR} ";:POKE 53281,FC:POKE646,CC
140 END
200 DATA 173,17,208,41,239,141,17,208
210 DATA 162,127,160,64,32,156,192,162
220 DATA 4,160,0,32,161,192,162,131
230 DATA 160,39,32,114,192,162,131,160
240 DATA 40,32,156,192,162,216,160,0
250 DATA 32,161,192,162,135,160,15,32
260 DATA 114,192,173,16,135,141,33,208
270 DATA 173,17,208,9,34,141,17,208
280 DATA 173,22,208,41,223,9,16,141
290 DATA 22,208,173,24,208,9,8,141
300 DATA 24,208,162,96,160,0,32,156
310 DATA 192,162,32,160,0,32,161,192
320 DATA 162,127,160,63,32,114,192,173
330 DATA 17,208,9,16,141,17,208,96
340 DATA 142,1,192,140,0,192,160,0
350 DATA 177,251,145,253,165,252,205,1
360 DATA 192,208,8,165,251,205,0,192
370 DATA 208,1,96,230,251,208,2,230
380 DATA 252,230,253,208,227,230,254,76
390 DATA 122,192,134,252,132,251,96,134
400 DATA 254,132,253,96
```

Insert the floppy diskette which contains your pictures. Then RUN the program. When you see the prompt "WHICH PICTURE?", type in the name of your picture, for example, "PIC I DRAGON", and hit <RETURN>. The picture will be loaded from the disk, the screen will go blank, and in a few seconds your picture will appear on the screen. It will stay there until you press and release either SHIFT key.

Message Systems Update

Andromeda RAPL   24 Hours
Phone: (02) 764 3598
Sysop: Public

Augur TBBS   24 Hours
Phone: (02) 661 4739
Sysop: Mark James   Reg/VA

Balmain RCPM   24 Hours
Phone: (02) 660 8182
Sysop: Reg/VA

Bert   24 Hours
Phone: (02) 211 0855   (1200/75)
Sysop:

BEX II RCDM   (19/COSMOS)
Phone: (07) 395 1809
Sysop: Rik Dalley

Bounty   24 Hours
Phone: (02) 918 3256
Sysop: Major Mango

CCUA BBS (C-64)   24 Hours
Phone: (02) 599 7342
Sysop: Public

Hotline   24 Hours
Phone: (07) 353 3718
Sysop:

Illawarra BBS   24 Hours
Phone: (042) 84 4354
Sysop: John Simon

Irata BBS   Mon - Fri: 1800 - 0000
Phone: (02) 600 9041   Sat - Sun: 24 Hours
Sysop: Paul Sommers

Omega Line/Bresike Omen 24 Hours
Phone: (02) 457 8281   (300/300 &
                        1200/75)
Sysop: Geoff Arthur   Public

Pursuit BBS   24 Hours
Phone: (02) 522 9507
Sysop: Warren Hillsdon Mem/VA

SMUG BBS   24 Hours
Phone: (02) 607 7584
Sysop: Bob Fryer   Reg/VA

Tandy ACCESS RIBM   24 Hours
Phone: (02) 625 8071
Sysop: Reg/VA

Teldata
Direct: (03) 813 3522
01921   300/300
01922   1200/1200
01923   1200/75

Tomorrow Land's DIRECT 24 Hours
Phone: (02) 411 2053
Sysop: John Thwaite   Reg/LVA

Video Connection   24 Hours
Phone: (03) 754 4203
Sysop: Robert Kroes
Meggabyte (03) 873 1023 After 10.00pm
Harboard (03) 587 2504
Ardvard (03) 723 4739

Zeta Remote TRS-80
system   Mon - Fri: 24 Hours
Phone: (02) 627 4177
                        Sat/Sun: 1900-0700
Sysop: Nick Andrews
            Reg/VA

NOTE:

This is only an update of the list printed in the last issue of The Australian Commodore Review (Vol 3 No 1).
Further updates will be published in future issues.
If you know of any other numbes please let Andrew Farrell know on
(02) 398 5111.

View from the Hold

This Rat has been away on holiday to foreign parts, and thus missed the distressing and libellous cartoon in the last issue of this distinguished magazine. My lawyers have been informed and no doubt Andrew Farrell will soon rue the day he decided to start drawing malicious and inaccurate cartoons of my noble profile.

* * *

The news from the United States worries this Rat more than somewhat. It does appear to these jaded and ancient eyes that the head honchos of Commodore have not been making all the right decisions for the new Amiga.

The major error was not fronting up at Comdex. This is an annual consumer electronic show which has tremendous importance in the United States where the retailer is king. As usual it was held in Las Vegas and, as usual, the adorati and the glitterati of the computer world were there.

Jolly Jack Tramiel, the people's friend, had a massive booth where he showed off the Atari and attracted the crowds. (The fact that the Atari is already having an appalling press in the United States because of the number of machines which have had to be returned for adjustment is beside the point. Atari got them out in the first place.) Commodore simply did not front up. True, there were several executives there who ran a hospitality suite some way away from the main centre of events. And true there were some vendors displaying compatible software. But, overall, Jolly Jack Tramiel walked away with all of the kudos.

It is not worth debating whether the Amiga is a better machine than the Atari or whether there is more software available. Unless the public are told clearly in words of one syllable then the project is simply not going to fly.

Our Rattish friends in the States do, however, inform us that according to K-Mart the Amiga is outselling the Atari six to one.

Now that Nigel Shepherd has been made President of the North American Commodore we can expect to see a rapid turn around in attitudes, approaches and general style. Young Nigel is a man who knows what he wants and will not suffer fools who stand in the way of him reaching the main target. I expect the American air to be rent asunder with the noise of the gnashing of teeth and the tearing of hair. And not before time.

The Amiga is a great machine of immense style and capability. It demands from those involved in its selling similar qualities. No doubt Nigel will winkle out the key people at Commodore in the United States who can provide that style and that capability. No doubt.

* * *

A letter from a reader who has found out something interesting:

Dear "Rat",

Recently I read through a few of my old computer magazines.

In "View from the Hold" of the January/February ACR, under a heading of "Promises, Promises", you asked the question:-

Where, this Rat asks in bemused wonderment, is the Unix compatible machine that was proudly announced last year?

Commodore in the USA decided to market the machine. Please find enclosed an article I found in an American magazine.

Dale Dixon, Bendigo, Vic.

The article from the American magazine:

" Commodore Announces Unix-Compatible Business System

Commodore recently announced plans to market the Commodore 900, a multi-user, multi-tasking, Unix-compatible business system that can support up to eight work stations. The system uses the Coherent operating system, which is fully compatible with AT&T's Unix System V, version 5.2.

Two configurations

The Commodore 900 is available in two configurations: as a personal work station with a 1024-by-800 pixel bit-mapped display, and as a multi-user business system supporting up to eight stand-alone terminals.

According to a company spokesperson, the system's 1024 x 800 high-resolution configuration allows you to create graphics previously found only on systems costing up to five times as much. In this configuration, the 900 can be mouse-driven and uses a sophisticated window manager for both test and graphics windows. Its "bit-bit" chip allows fast screen operations, so windowing is quick and easy. This configuration also allows the use of many different text fonts and proportional spacing for quick, accurate document processing.

The system's multi-user business configuration comes packaged with an integrated terminal, which acts as the first user terminal. Additional terminals are stand-alone, industry-standard, RS232 character-mode terminals. "